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Published by A. R. ELLIOTT PUBLISHING COMPANY, 66 West Broadway, New York.

Vol. CVI, No. 4. Whole No. 2017. | *A Weekly Review of Medicine, Established 1843* | Yearly Subscription, $5.00 Single Copies, Fifteen Cents

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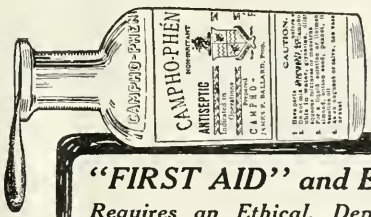

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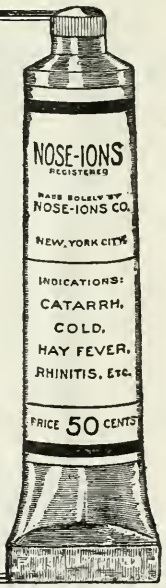

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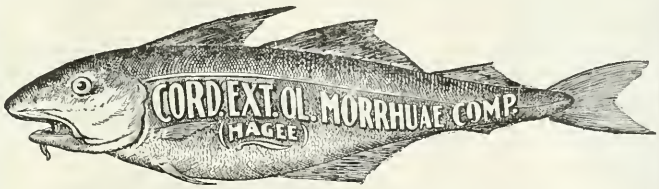

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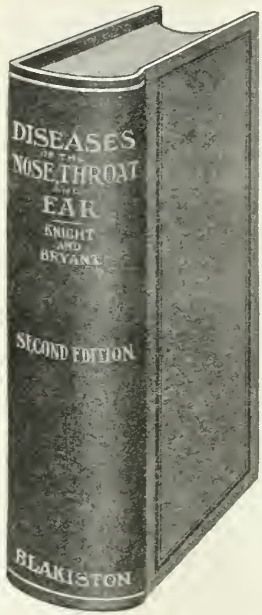

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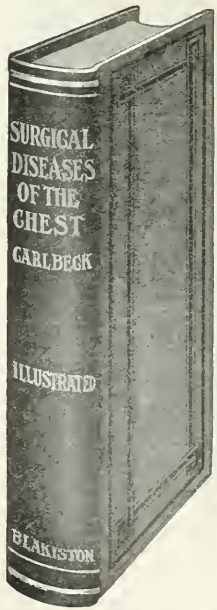

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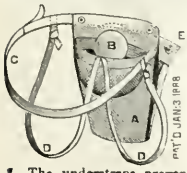

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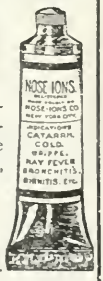

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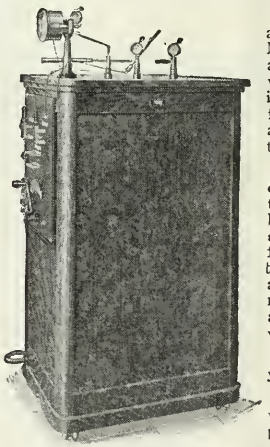

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Original Communications

THE CONTROL OF UTERINE HEMORRHAGE.*

BY ASA B. DAVIS, M. D.,
New York.

Uterine hemorrhage may occur at any time from the birth of the female child to the end of the life of the woman. It most commonly occurs during what is known as the child bearing period in a woman's life—from the onset of menstruation until its cessation at the menopause. Pathological conditions may be present or may develop in the uterus or systemic conditions may arise at a time prior to, during, or after the cessation of menstruation, which either allow or cause a flow of blood from the uterus. This flow has a wide range as to cause, amount, duration, and severity. It varies in degree from slight transitory blood staining, moderate bleeding of short duration or continued over a considerable period, to a short severe hemorrhage which quickly threatens or actually destroys life. Thus, we occasionally see bleeding from the vagina in the hemophiliac infant within the first four days of life. This is usually accompanied by more pronounced bleeding or actual hemorrhage in other parts of the body, especially from the umbilical stump, the intestinal tract, or the mouth, or into the subcutaneous tissue and brain. This loss of blood is due to a systemic condition which is as yet little understood.

Treatment of hemophilia neonatorum.—Even where the bleeding surfaces may be reached, local treatment is of little value. In nineteen years prior to 1909, there occurred in the service of the Lying In Hospital eighteen cases of this disease. These patients were treated with calcium lactate, gelatin, adrenalin locally applied, and various other drugs which appeared from time to time and held forth great promises as hemostats. Compresses were bound or sutured tightly over bleeding umbilical stumps and such other bleeding surfaces as could be reached. In the cases where sutures were used, blood would soon begin to flow through the needle holes. Adrenalin applied locally would blanch the tissues and stop the bleeding for a short time, but soon its influence was spent and bleeding recurred with greatly increased flow through the now more or less paralyzed vessels. We do not recall that calcium lactate or gelatin produced any result whatever, although it is still taught that they are valuable remedies in this condition. The result of conscientious use of all these remedies was that one hemophilic baby out of eighteen lived. We must believe that this result was in spite of rather than because of the treatment administered.

Then, as an example of a considerable number of cases of a given kind appearing in a short time in a hospital service, there occurred within one year twelve cases of hemophilia neonatorum, although in nineteen previous years only eighteen cases were seen. In 1909, Dr. J. E. Welch, at that time pathologist to the hospital, conceived the idea of treating these patients with injections of twenty to thirty c.c. of fresh human blood serum three times every twenty-four hours. This treatment was carried out so successfully that all of the twelve moribund bleeding babies recovered. Six of these infants were in our own service and under at least daily personal observation. We saw what were believed to be hopelessly moribund babies quickly improve after the first injection and go on to complete recovery within forty-eight hours. Although we are unable to continue to report one hundred per cent. recoveries by this treatment, it is still the most successful method known to us for such cases. We are unable to state what can be accomplished now with the much better understood means of direct transfusion of human blood in the treatment of hemophilia neonatorum. Doctor Welch's report of the first twelve cases (1) is interesting. He cites authorities stating that serum from one species injected into a different species of animals cause "serum sickness" in many instances. This manifests itself by local or general irritation, evidences of pronounced poisoning, and not infrequently by sudden death soon after the injection of serum. He also brings forth evidence to show that when whole blood is injected the blood cells are foreign bodies and are harmful.

Disturbances in menstruation due to anemia or to an overtaxed and rundown condition express themselves at times in almost directly opposite ways although due to common causes. Thus in one group of cases the menstrual flow is small in amount, occurring at longer than usual intervals, or it may be entirely absent for many months, as though nature were attempting to conserve the lowered energies of the patient by avoiding the

*Read before the Medical Association of the Greater City of New York, March 19, 1917.

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drain incident to periodical loss of blood. In another group of cases a vicious circle is evident; the intermenstrual interval is shortened and the flow becomes profuse, amounting in some cases to hemorrhage. The anemia, lack of tone, and run-down condition allow this excessive and frequent loss, and this loss in turn exaggerates the anemia. To illustrate by concrete examples: The reports of the blood examination of two schoolgirls came to us recently. These reports are very much alike; they show moderate diminution of red cells, with a decided lowering of hemoglobin, white cells, and polynuclears. One girl is seventeen years old, tall, active, and excels in rather violent sports, such as basketball and tennis. She is also an ambitious and capable student. Menstruation has always been moderately irregular and never profuse. For the past six months it has been entirely absent, and she has not the usual ambition and zest of life. The other patient is twelve years of age. She began to menstruate regularly one year ago every twenty-six days with a fairly free flow of blood and without much pain. Now, profuse menstruation occurs every two weeks. This patient is rather stout, rather lethargic, and is growing rapidly. The demands of school are difficult for her to meet. Regulation of the mode of life, less work, more sleep, adjusted diet, and tonic treatment will make menstruation recur in the first patient; and in the second, that which amounts almost to a hemorrhage every two weeks, will be diminished and the usual interval of twenty-six days will be restored.

Hemorrhage occurring during pregnancy, labor, and the puerperium.—It is possible for a woman having a breaking down neoplasm of the cervix to become pregnant and to be subject to hemorrhages from this site during pregnancy and labor and after. In our experience such cases are extremely rare. There is evidence that the habitual periodical menstrual congestion of the pelvic viscera—though the flow of blood is held in abeyance—is continued throughout pregnancy. In a considerable number of women it appears normal for menstruation to recur within a few weeks after delivery and to reappear at regular intervals throughout lactation. We are not satisfied that we have ever met with a case of true menstruation during pregnancy. We do have unmistakable evidence occasionally that the capacity of the uterine cavity is not nearly fully occupied by the contained ovum in the early months of pregnancy. It is conceivable that a flow of blood from the uterus may appear coincident with the periodical congestion just mentioned, without causing decidual detachment. We know that spontaneous abortion is much more liable to occur at or near what would have been a menstrual period, partly at least because of this habitual congestion. At such times the pregnant woman should remain quiet and free from nervous and physical exertions. By far the greater number of instances of uterine hemorrhage during pregnancy have their origin at the site of some degree of detachment of the placenta. The placenta may be normally located in the upper part of the uterine cavity, or it may be found in the lower zone of the uterus, constituting some degrees of placenta prævia. During labor, this cause may continue to be active. Hemorrhage may come during the second stage from a cervix which is lacerating. After the delivery of the child, uterine hemorrhage can come from but two sources, the placental site or from lacerations.

The appearance of so called "spotting" in the early weeks or months of pregnancy is a danger signal; it is a threat to abort. We meet threatened abortion, inevitable abortion, incomplete abortion, and very rarely complete abortion. In threatened abortion, we see slight blood stains without pain or any evidence of uterine contractions; in other cases, a considerable flow without pain; there may be a scanty flow with considerable pain or much flow and decided pain in the back. Vaginal examination does not reveal dilatation of the cervix nor protrusion of any part of the ovum. In many of these cases abortion can be averted. Absolute rest in bed and the recumbent position constantly maintained are imperative. Where uterine contractions are going on as evidenced by pain and where there is considerable flow even without pain, uterine rest must be assumed. This can best be accomplished by placing a light icebag over the lower part of the abdomen and using some form of opium freely up to the physiological limit or enough to stop the pain. Inevitable abortion is indicated by more or less uterine hemorrhage, persistent intermittent pain, uterine contractions, and dilatation of the cervix, with protrusion or rupture of the sac of membranes. This condition may be present when the patient is first seen, or even under treatment the threatened abortion may merge into an inevitable abortion. Incomplete abortion is practically the progression of inevitable abortion, with expulsion of part of the products of conception. Hemorrhage may be profuse during the process of expulsion. After this has taken place, uterine contraction tends to diminish the size of the uterus and reduce the bleeding to about that which is seen after normal delivery. In the treatment of inevitable and incomplete abortion the indications are the same. In inevitable abortion of more than three months' duration, in which there is profuse hemorrhage, it is best to pack the uterine cavity and vagina tightly with gauze. This will stop the hemorrhage, increase uterine contraction, and hasten the separation of the placenta. It will also soften and dilate the cervix. In the earlier months, packing the cervix and vagina will control the hemorrhage. Within twenty-four hours after the packing the uterus should be emptied and sufficiently curetted with a dull instrument. The patient is anesthetized and as carefully prepared as for any other vaginal operation. It is our routine practice to curette all these cases, swab out the uterus with half strength tincture of iodine, and pack with five per cent. iodoform gauze. This gauze is removed within twenty-four hours. In this way we know that the interior of the uterus is clean. The gauze packing checks further bleeding; it is a foreign body which the uterus attempts to expel by uterine contractions. In this way, particles of membrane and placenta are squeezed off against the gauze and involution of the uterus is well started. In some of these patients very little material is brought away by the

curette; we at least know beyond question that the uterus is entirely empty. In many cases we have a report that "everything has come away," but we are often surprised at the amount of material that we find in the majority of such cases. It is doubtful if any one can say before exploration that any abortion is complete.

Later in pregnancy, in the fourth or fifth month and before there is hope of a viable fetus where there is profuse hemorrhage, as in an early recognized placenta prævia, or in cases where the membranes have ruptured and abortion or early miscarriage is inevitable, we secure better results by emptying the uterus in two sittings, in which case full aseptic precautions are observed and the patient is anesthetized, preferably with gas and oxygen. The uterus and vagina are tightly packed with gauze. Twenty-four hours later, the gauze is removed and the cervix is found to be soft, dilated, or readily dilatable, and the placenta detached so that it can be removed with the fetus with little difficulty, and without the loss of much blood or much mutilation of the cervix; whereas if the one stage method is followed there is apt to be considerable injury to the cervix and the total loss of blood is usually large before the operation is completed. If we perform the so called vaginal Cæsarean operation, there is still a mutilated cervix left.

Placenta prævia.—This is one of the most dangerous complications that the obstetric surgeon is called upon to face. It is of rather frequent occurrence. The dangers to mother and child are very great because of the loss of blood before, during, and often after delivery. Because of this loss and the shock and traumatism during forcible delivery, the mother's powers of resistance are very much lowered, and if she survives delivery she is especially susceptible to septic infection, even though great caution has been observed to avoid this. He is a very wise man who is able in advance to formulate plans which can be successfully applied to the treatment of all cases of placenta prævia. Conditions vary so widely in different cases that there is no class of cases in which individualizing is so important. Space does not permit a full discussion of this subject. Several salient points may be mentioned. Several hemorrhages are usual if pregnancy is not terminated soon after the first. Continuous profuse hemorrhage is not the rule, although it may occur. The interval between the attacks may be a few hours to ten or more days. These patients rarely die undelivered. If they are to remain at home, a trained obstetric surgeon should be in constant attendance and delivery should not be long delayed. Where it can be avoided, the vagina should not be packed. It has been repeatedly noted that in packed cases septicemia is particularly liable to develop. All placenta prævia patients have a better chance if treated in a hospital. In case the bleeding is moderate or in case there has been one considerable hemorrhage which has entirely ceased and it is desirable to continue the pregnancy as long as possible in the interest of the child, it is imperative that the patient shall be in the hospital and ready for surgical intervention at any moment.

The number of successful plans advocated for the delivery of placenta prævia patients bespeaks too often their lack of reliability. The writer has recently delivered three multiparous women with partial placenta prævia very near term by manual dilatation and version. All of the mothers and two children are recovering well. The third child had moderately delayed respiration, was apparently normal for four or five hours, then had several attacks of cyanosis at short intervals, and died although every effort was made to save it. In these cases, there was very little laceration of the cervix. Extensive laceration of the cervix, even to rupture of the uterus, is a very common danger in this method of delivery. Excellent results are reported by slower dilatation with bags; yet within a year one of my staff colleagues tried this method. His patient recovered from delivery, but died of septic infection within a week or ten days. I know him to be particular almost to a fault in his asepsis. Some are much in favor of drawing one leg of the child down through the cervix and allowing the mother to complete the delivery. The child rarely survives. Cæsarean section has its advocates. There appears to be a growing tendency to frown upon this method of treating placenta prævia. In primiparous women bleeding dangerously in whom the cervix is dense and undilated, this method should be given first place. The writer has performed 348 abdominal Cæsarean sections. Speaking from memory, twelve of these have been for placenta prævia. In the past fourteen months he has performed fifty-eight Cæsarean sections without maternal death; two have been for placenta prævia. We conscientiously believe that several other mothers in our service who have been lost during the past year by other methods of delivery for placenta prævia, would be alive today had Cæsarean section been employed. In some cases no treatment is required after the delivery of the placenta. In others, the hemorrhage may be very dangerous; while the upper part of the uterus contracts firmly, the lower part is atonic, especially the placental site which bleeds profusely. Lacerations of the cervix should be sutured rapidly, the uterus and vagina firmly packed, pituitrin injected, and the fundus held until it shows no tendency to considerable relaxation. The shock and acute anemia may require prompt treatment. Transfusion of carefully tested blood has undoubtedly saved a number of these women.

Accidental hemorrhage.—This is hemorrhage usually occurring late in pregnancy and having its origin at the site of a partially detached normally located placenta. Such cases are of rather common occurrence. A history of accident is usually obtainable, such as a fall or a blow over the uterus, or it may be that the umbilical cord is wrapped about the body of the child so that the cord is rendered short, and active movement of the fetus may exert enough pull upon the placenta to detach a portion of it. Usually for a few hours after the injury this is in truth a concealed hemorrhage. During this time symptoms are not usually very evident. Soon the blood forces a passage down between the membranes and the uterine wall and out through the cervix. Thereafter the loss of

blood is rapid, and the lives of the mother and fetus are quickly placed in great jeopardy. In case the cervix is dense and undilated it is very difficult to distinguish between accidental hemorrhage and placenta prævia. In either case, immediate abdominal Cæsarean section is indicated.

Post partum hemorrhage.—This form of hemorrhage must come from the placental site, from the lacerations of the cervix or uterus, or from all of these points. Usually hemorrhages from lacerations of the vagina are also classified under this heading. Hemorrhage from the placental site after the delivery of the child may come from a partly detached placenta, sometimes adherent or having areas of varied size which are adherent and holding open placental sinuses. If the hemorrhage is at all profuse, indications for immediate removal of the placenta are present either by expression or by manual separation of the placenta with the hand inside the uterus. Care should be taken that the placental site is cleared of all placenta. A small tab of placenta, probably so located as to hold open the mouth of a large sinus, has been seen as the cause of a rather alarming hemorrhage. After the placenta has been removed, the usual cause of hemorrhage from the placental site is atony of the uterus or an irregularly contracting uterus. Blood clots in the sinuses are only a part of the physiological means of preventing hemorrhage. Retraction and contraction of the uterine muscles must take place. Injection of ergot or pituitrin will help force these muscles to do their required work. Pituitrin acts more quickly and probably more forcibly than ergot; its action is probably not so long sustained. Before either of these drugs become effective, a dangerous or even fatal loss of blood may occur. Every other means must be brought into use—massage of the fundus; forced anteflexion of the uterus against the symphysis or compressing the fundus with one hand externally against the other hand in the uterus; a very hot intrauterine douche, 118 to 120° F., of normal salt solution, bichloride of mercury, one to 10,000, tincture of iodine or, best of all solutions of acetic acid, two ounces to four quarts of hot water. In case the douche is not quickly at hand, a large wad of gauze or cotton saturated with acetic acid and carried in the hand well up in the uterus and applied freely all over the interior of the uterus has proved successful many times by us in outpatient practice. The acetic acid will irritate and stimulate the uterus to contract quickly. It overcomes hemorrhage due to irregular uterine contraction.

It is now rare that we employ anything but packing the uterus and vagina with gauze and maintain uterine contraction upon this by the use of ergot or pituitrin and manual compression of the fundus. Hemorrhage due to laceration of the cervix cannot be controlled by packing. If large arteries have been torn across, packing is a most dangerous procedure It is effective for about one hour; it gives a sense of security which is false and valuable time and blood are lost; it is responsible for the loss of many lives. It is not possible to adjust packing so that it will continue to maintain a complete check on hemorrhage from deep lacerations in the cervix; nothing short of actually ligating these vessels or including them in sutures which bring the edges of the lacerations together can be depended upon. If lacerations of the cervix have extended up into the uterus and into the broad ligament, better results will be obtained if these are considered as rupture of the uterus and immediate abdominal hysterectomy is performed. Hemorrhage from laceration of vagina and perineum may be great enough to be dangerous. They are accessible and should be controlled by ligatures and sutures which repair the lacerations.

Undoubtedly transfusion has saved many lives that would otherwise have been lost because of the pronounced acute anemia following post partum hemorrhage. There is a form of post partum hemorrhage which appears in a few cases soon after leaving the bed at about the tenth or twelfth day. While in bed, these patients have been normal; the involution of the uterus has apparently been progressive; the lochial discharge has diminished and is serosanguineous or serous. Such patients at once, upon standing on their feet, begin to flow steadily, rarely profusely, bright fresh blood, not from lacerations, but from a relaxed uterus. They should return to bed with an icebag over the lower abdomen and a dram of ergot three times a day. We have seen a few cases in which ergot seemed to have no influence whatever upon this form of bleeding; but given one c. c. of pituitrin three times a day, the bleeding stops within the first thirty-six hours.

Late post partum hemorrhage.—There is a form of post partum hemorrhage which appears two or three weeks after delivery after the mother is up and about her usual duties. There is usually one large hemorrhage followed by slow bleeding. These cases are rather rare. The uterus is large and subinvoluted; it may be displaced. Our best results are obtained by treating such cases after the same plan advised for incomplete abortion—curettage, swabbing the uterine cavity with iodine, packing with iodoform gauze, and rest in bed for eight to ten days.

Space does not permit the consideration here of the uterine flow in ectopic pregnancy, that incident to the menopause, hemorrhage in connection with neoplasms of the uterus, or the sometimes dangerous hemorrhages which occur in small fibrous uteri of nulliparous women.

REFERENCE.

1. WELCH: *Bulletin of the Lying In Hospital*, March, 1910, iv.

42 East Thirty-Fifth Street.

Acinitis.—Frank C. Knowles (*Journal of Cutaneous Diseases*, February, 1917) reports a case of acinitis in a negro. The patient was twenty-six years of age and the eruption was on his face for six months previous to the consultation. The lesions, which were numerous, consisted of papules and nodules of dark red color with a little tinge of yellow, some showing minute crusts. Although every effort was made to find tubercle bacilli in the sections studied, it was in this as in other cases, futile. Treatment had no effect on the course of the disease.

RACE BETTERMENT BASED UPON PRINCIPLES OF PHYSICAL AND MENTAL PROPHYLAXIS.*

By Alfred Gordon, M. D.,
Philadelphia.

The problem of prevention is one of the most important chapters in medical science and presents the greatest field of usefulness. Prophylaxis is intimately associated with numerous branches of medical science and the opportunities for achievement for the benefit of the community and for mankind in general are limitless. I shall review briefly some of the problems concerning two great scourges of humanity in which the scientific man may be of greatest service in applying the principles of prevention—syphilitic infection and alcoholic intoxication.

There is no tissue or organ that is more frequently and more profoundly affected by the syphilitic poison than the nervous system. It may become affected at any phase of syphilitic infection, the primary, secondary, or tertiary periods. The peripheral as well as the central nervous system suffers from the spirochetes or their toxins. The brain and spinal cord in some cases are very early affected. Fournier, the Nestor of syphilology, long ago called attention to the fact that sometimes from the very beginning of the infection the toxin seems directed toward the central nervous system. What occurs in the tertiary period of syphilis is too well known to dwell upon. Tabes and paresis are the common outcome of an old syphilitic infection. Obstinate and persistent headache, cerebral hemorrhages and softening, epilepsy, and myelitic and meningeal processes are all not infrequent potential consequences of syphilis. In all these conditions the usefulness of even early intervention is limited and sometimes futile. In fact the opinion of many highly competent men, syphilologists as well as neurologists, is that reliance should not be placed too confidently on the curative effects of the most modern methods of treatment of syphilis of the nervous system. It is sufficient to see even once under the microscope the innumerable wriggling spirochetes in an infinitesimal speck of brain tissue taken from a paretic to form an idea of the difficulty of overcoming them with remedies. While favorable results are obtained in some cases by the intraspinal and the intracerebral injections of salvarsanized serum, these results cannot be regarded as a cure. Once the individual is syphilitic, it is difficult, if not impossible, to establish eventual complete recovery. The primary and even secondary manifestations may be removed but there is no guarantee whatsoever that years after the initial infection the potential syphilitic will not manifest some grave organic disorder in the central nervous system against which science is powerless.

If therefore the physician's usefulness is limited in arresting completely a syphilogenic process once established, the greatest service will be found in prevention of and protection against further dissemination of the infection. In this particular field, efforts may be crowned with enormous success. First, of all, the physician should advise against the transmission of the disease to others by taking all sorts of precautions, such as avoiding actual contact, intimate and otherwise. The patient should be told to continue his treatment uninterruptedly for years by methods deemed most advisable. This counsel should be given to syphilitic individuals at any period of disease.

A highly important chapter in the history of syphilis is found in its hereditary features. The study of heredity has been for the last fifteen or twenty years most encouraging. More or less definite principles of genetic transmission have been disclosed and elaborated not only in plants but in animals in general. The welfare of mankind is closely associated with and dependent on these principles. The study of inheritance in man on the Mendelian plan with regard to normal characteristics is still in its incipiency. The studies of Hurst on eye color, of Bell and Rizzoli on hair, of Mudge on mulattoes, of Galton on stature represent advances along these lines. The study of abnormalities and of pathological conditions has been more fruitful. Skin and hair affections, such as keratosis palmaris and plantaris, hypotrichosis by Gossage (1); cataract by Nettleship (2); polydactylism by Fotherby and Lewis, A. Gordon (3) and others; brachydactyly by Farabee and Drinkwater (4)—are studies of a few examples of abnormalities which were found transmitted through several generations. Some diseases such as pseudohypertrophic muscular paralysis, retinitis pigmentosa, diabetes, hemophilia have been also studied from this standpoint. More elaborate studies have been made on transmission of morbid hereditary features in mental deficiency and psychoses. It has been shown that normal and abnormal parents bring into the world respectively normal and abnormal offspring and that the numerical and qualitative distribution of the abnormalities follow certain definite laws. This is due to the existence in the original parent germ cells of definite factors or determiners which possess the power of transmitting certain characteristic units. No individual can transmit to the offspring a character unit which he has not possessed. Variability of plants and animals is the result of special crossing and mating in which addition or loss of special characteristic units plays the most essential rôle. Once the special units of character exist they are permanent and cannot be obliterated.

When the germ cell is diseased, the offspring will be defective. Among the many causes of this condition one of the most potent is syphilis. Hereditary lues originates in children in this manner: either the male or female generative cell or both contain the infection of syphilis and the new growing organism will be in a pathological state. The modifications of nutrition produced by the infection in the organisms of the generators are found in the offspring because cellular reactions are essentially transmissible through heredity. This will result in general dystrophies or in an arrest of development of such intensity that extensive deformities or actual malformations of the central nervous system and other organs will follow. Asymmetries, microcephaly, hydrocephalus, spina bifida, cerebral and

*Address delivered at the commencement exercises of the College of Physicians and Surgeons, Boston, June 12, 1917.

medullary dystrophies, and finally monstrosities are a few examples of the influence of hereditary syphilis. Pathological manifestations in hereditary syphilis may make their appearance at all ages. Fournier places wide limits, between the third year up to the twenty-eighth, with the maximum of frequency around the twelfth year, but with newer methods of biological investigations cases of brain syphilis are observed even in advanced age. With the advent of the blood and spinal fluid tests syphilis can be detected in cases never suspected before. A very wide variety of nervous and mental disorders are observed in children with hereditary lues. As an illustration, in a recent investigation by me of seventy-eight children whom I studied from the standpoint of hereditary syphilis, there were twelve imbeciles of middle grade; four idiots; ten imbeciles with gross organic changes—seven hemiplegics and five monoplegics; seven feebleminded with functional nervous disorders such as tremor, restlessness, insomnia, enuresis, and choreiform movements; sixteen feebleminded with major attacks of epilepsy; twelve feebleminded with attacks of petit mal; three feebleminded suffering from continuous headache; three feebleminded with colobomata in the eyes; and eleven feebleminded without functional or organic nervous disorder. These figures show strikingly the disastrous influence of syphilitic poison on the parental germ cells. This influence may be exerted even many years after the parent's initial infection, a fact of an enormous sociological import. It would require considerable time to indicate the various morbid manifestations observed in cases with syphilitic infection. Suffice it to merely mention that an individual who is potentially syphilitic is always in a state of a special susceptibility to serious nervous or mental disturbances and he is apt also through his diseased germ cells to procreate children with serious physical and mental abnormalities. The latter will continue the pathological chain and, if not interrupted, bring in their turn defective offspring and fill the community with undesirable elements.

Next to syphilis the most injurious poison of the nervous system is alcohol. I cannot enter into a detailed dissertation of the physiological action of alcohol and of its pernicious effect on the most delicate structure of the human organism, the nervous system. I will content myself with presenting a few of the very many facts accummulated, as the literature is quite extensive on this important subject. From the standpoint of prophylaxis I will call attention to a special study of fourteen cases of alcoholism in children who are apparently free from any morbid heredity (5). Nine of this series of children became orphans at a very tender age. Distant relatives took charge of them, but soon abandoned them and those children were placed indiscriminately with various families for menial services. These families happen to be of a low moral and intellectual level. The children grew up without any supervision or direction and became early the victims of the bad habits which they witnessed daily. Drink was the most conspicuous vice that they saw being cultivated. As children are great imitators, and as they were deprived of any wholesome outside influence, they acquired at first the habit and later a craving for drink. The other five members of my series lived under the supervision of their parents in early infancy. Since that time the parents suffered various financial shocks of the gravest nature. Other unfortunate circumstances which soon occurred added considerably to the material disaster. Thus was created an open avenue for the reception of the ever present vice—alcoholism. The homes were broken up, the children drifted away, and as they were of a tender age, they became involuntary witnesses of the physical and psychical misery. Deprived of necessary food but always supplied with beer, they presented a picture identical with that of the children of the first group. Briefly the following conditions were observed: Mental arrest, mental dullness, lack of moral conception, perversion of moral sense, no knowledge of the most ordinary normal relationship between man and man, no conception of conventional laws, brutal tendencies and impulses of the most primitive character, abnormal sexual proclivities, and excessive use of tobacco. Not infrequently were they found in a stuporous or confusional state following drink. It is needless to enumerate the number of escapades and various unlawful acts committed by these juvenile degenerates. Their medical histories are equally interesting. Epileptic convulsions, various neurotic phenomena, and insomnia were all present. This brief account of the effect of acquired alcoholism shows almost with mathematical precision the direct nefarious influence of alcohol on an individual during his physiological development.

Alcohol occupies a very conspicuous place among various agents which are capable of deteriorating the germ cells and thus produce a lasting alteration in the hereditary energies of these cells which will be manifested in anomalies and defects involving the embryonal development of varions organs. This problem seems to be placed now on a very firm basis through the experimental work of C. R. Stockard and G. Papanicolau. These experiments suggest that the chief bearer of the herditary qualities which they call chromatin is pathologically affected in alcoholized parents. Among the descendants of alcoholized males are a large proportion of degenerates, deformities, abortions, and early death of the young, and sterility begins to manifest itself in those who survive. The structural defects affect mainly the central nervous system and the special sense organs. As one of many examples of this truth I present a brief account of three series of pedigrees of families in the histories of which alcohol was the sole agent that created abnormalities in several successive generations (6).

In three generations of the first family I found individuals with various degrees of mental deficiency, epilepsy, choreiform movements, tremors, eccentricities, and violent temper; I found also miscarriages and stillbirths. In the second pedigree alcoholism was present in the grandfather and son. The latter had three children of whom one died at six months from meningitis, one is epileptic, and the third is a masturbator. The other children of the grandfather were not alcoholic but were ab-

normal, and two of them were married and gave birth to several defective children. In the third pedigree one of the grandparents was profoundly alcoholic. Out of six children only one was normal, but he never married. Of the others two married and were the parents of several defective children. It is therefore evident that alcoholized individuals procreate defective children. One family is capable of throwing into the community dozens of useless or dangerous individuals who, if capable of multiplying, will produce their like.

Summing up the facts just stated, it may be said that syphilis and alcoholism are two great agents par excellence which are capable of producing ravages not only in the individuals affected with these diseases, but also in the progeniture created by the individuals. To enumerate the direct influence of alcohol, for example, on the addict would entail considerable time. I have not touched upon the effect on individual organs; I have not mentioned its direct damage to the nervous system, I have not dwelt on the frequently irremediable mental disorders that it is capable of producing. I called attention to but a very few most salient facts which point the way to one of the most important functions in medical work—prophylaxis.

If the problem of mental deficiency only is considered, which is an inherent state and is very frequently the result of a pathological state of the germ cells of the syphilitic or alcoholic parent, it will at once be realized in which direction efforts will bring desired results. In a study made by Thomas H. Haines, clinical director of the Bureau of Juvenile Research, Columbus, Ohio, entitled Feeble Mindedness Among Delinquents, it was found that many delinquents are defective in mental endowment. He calculates that nineteen per cent. of admissions to the Ohio Penitentiary and State Reformatory may be classed as sexual offenders; forty-eight per cent. committed offences against property rights; thirty-three per cent. committed offences against rights to life. Haines's complete table is very eloquent and speaks for itself (7).

TABLE I.

CLASSIFICATION OF OFFENCES OF WHICH 100 PRISONERS STAND CONVICTED.

Sex.		*Life.*	
Rape	4	Robbery attempt	8
Incest	1	Carrying concealed weapons	4
Bigamy	3	Cutting to wound	8
Sodomy	1	Attempt to kill	1
Exposure	1	Cutting to kill	1
Liquor to a girl	1	Shooting to wound	2
Nonsupport	6	Shooting to kill	1
Abandonment	2	Manslaughter	7
Property.			
False pretenses	2	Burglary	5
Embezzlement	2	Burglary and larceny	11
Forgery	7	Housebreaking	2
Pickpocket	3	Interference with railroad property	2
Larceny	5	Receiving stolen property	2
Grand larceny	7		

Fifty-eight of the hundred delinquents are repeaters. They have previous records either in the correctional institutions of Ohio or other States or in workhouses. Another author, William J. Hickson, director of the Psychopathic Laboratory, Municipal Court, Chicago, taking at random 245 boys committed to court for various offenses, finds ninety-three per cent. defective. The same writer speaking of his experience with the Domestic Relations Court says: "A large percentage of marital unhappiness and shipwreck has feeblemindedness at the bottom." Paul E. Bowers, physician in charge of Indiana State Prison, in examining 100 recidivists finds among them: twelve insane; twenty-three feebleminded; thirty-eight constitutionally inferior; seventeen psychopaths, and ten epileptics. The 100 habitual criminals are therefore defective.

The relation between alcoholism and criminality is of considerable sociological importance. Crimes have been committed not only during the abuse of alcoholic drink, but also during chronic alcoholic intoxication. During the acute intoxication there is great emotionalism and motor overexcitability. In the chronic form there is a lowering of capacity for physical and mental work. The individual is intrinsically incapable of satisfying the exigencies of life, hence he succumbs to temptation. Assault, murder, and incendiarism are crimes common to both acute and chronic intoxications. In estimating the direct relationship between chronic alcoholism and criminality one must bear in mind the inner causes of alcoholism. We have now sufficient proof that in the largest proportion of these cases there is a pre-existing psychical defect so that criminal chronic alcoholics are originally inferior individuals and their mental decay progresses uninterruptedly under the pernicious influence of alcohol.

The subjects of syphilis and alcoholism are inexhaustible. It would necessitate many hours and many volumes to describe the ravages they produce on individuals and communities. I had merely reviewed a very minor part of the subject but endeavored to present a few of the facts in order to indicate the necessary rôle of the physician in working out the problems of prophylaxis. He should bear in mind first the direct effect of the pernicious agents and next their influence on the offspring through a hereditary mechanism. The latter is the most important. Consider for a moment that we are constantly building asylums, sanitariums and prisons to shelter the constantly growing number of unfit. Are we not deluged by a progressively accumulating flood of defectives in every sense of the term? If it is so, are we not breeding defectives? Since we know that human harvest is based essentially on inheritance, are we not criminally negligent in permitting the production of such crops? Let us not waste our energies in devising various methods for curing deficiencies but let us rather devote our work toward preventing them. Any assumption that an improvement of external conditions will remove human deficiencies and reform chronic offenders who are constitutionally below normal is an illusion of mistaken philanthropy. The student of heredity must realize that intrinsic qualities of human species are to be found almost exclusively in suitable matings of individuals. The solution of the problem of betterment of the race lies in two essential principles: 1, a selection of the fittest for union; 2, prevention of reproduction among the unfit. Success in this double endeavor requires recourse to methods of education. The seriousness of the entire situation must be brought to light, the knowledge of facts of heredity must be disseminated and each individual in choosing a marriage mate must know

that he is choosing a future parent for his children. Heredity is the great force that governs the world; it controls all the acts of life, physiological as well as pathological. Morbid heredity is of major interest. Is it not of the gravest importance to know what type of individual will be the son of an alcoholic, a syphilitic, or an insane parent? How many unfortunate marital unions, miserable existences, and domestic tragedies could be avoided through an exact knowledge of the value of the principles of heredity! Heredity is a biological law according to which the parents transmit to their offspring peculiarities of organization and normal or morbid aptitudes. *"Is pater est quem nuptiæ demonstrant"* was the axiom of Roman law. Biologically we may say: *"Is pater est quem morbi filiorum demonstrant."* A syphilitic or alcoholic individual is capable of poisoning the blood of a whole family for generations. If I make the statement that according to the latest authoritative census there are now about eight million syphilitics in United States, you will agree that the situation is truly alarming. Does not the society owe it to itself as a matter of selfpreservation to prevent, with force if necessary, perpetuation of the defects created by the syphilitic or alcoholic poisons? The duty of physicians is plain regarding the application of these facts. By enlightening the public and by intelligent agitation of these vital problems a fair degree of cooperation of the people will be eventually obtained. Physicians possess the scientific facts demonstrating the right of every child of the future to be well born and that the sacred duty and obligation of every individual toward mankind is to see that his own germ plasm is not impaired by preventable poisons. At this juncture it is interesting to recall Régis's definition of degeneracy: "It is a decadence of the species which goes progressively to extinction of its descendants who by virtue of physical, intellectual, and moral defects are less and less capable of adapting themselves to surroundings."

Study this problem, keep pace with new facts, and develop an enlightened interest in ideals of eugenics in every one with whom you come in contact. The task is a difficult one but if at least some people can be convinced that the social evils can be prevented, that the defective intellect, the criminal tendencies, and the degeneracy of the child all originate from a pathological parentage, your contribution to mankind will be of the highest order. The rôle of the physician does not lie exclusively in removing suffering. His mission must be a higher one. Who, if not the physician, can serve as the best guide to an honest man who undertakes to lay the foundation of a family? The physician alone can avert danger by emphasizing to the candidates for marriage the laws of heredity and the consequences of morbid heredity; he alone can make it clear to any man or woman, that to read daily on the face of their child the stamp and the reproach of a morbid taint which they tried to conceal is more torturing than the stain of blood of Macbeth. To combat social misery and all its consequences is to combat physical and moral deterioration. Preventing them means to prepare generations better equipped to resist depressive influences in life and therefore more apt to receive an intellectual and moral foundation which will transform them. *Fortes fortibus genearantur* is the logical conclusion drawn from the application of biological knowledge to social evolution.

REFERENCES.

1. GOSSAGE: *Quarterly Journal of Medicine*, 1908, 331. 2. NETTLESHIP: *Report of the Royal London Ophthalmic Hospital*, 1905, xvi, 1. 3. A. GORDON: *Virginia Medical Semi-Monthly*, May 7, 1915. 4. FARABEE and DRINKWATER: *Proceedings of the Royal Society of Edinburgh*, 1908, xxviii, 35. 5. *Medical Record*, March 8, 1913. 6. *Interstate Medical Journal*, 1916. 7. HAINES: *Journal of the American Institute of Criminal Law and Criminology*. January, 1917.

1812 Spruce Street.

A SIMPLE ASPIRATING DEVICE.

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About twenty years ago, I described an apparatus called the tube stripper, intended to take the place of bulbs in extracting stomach contents. This consists of crossed bars, like scissors or forceps, the short ends of the bars bearing rollers which compress the stomach tube and can rapidly run along it, producing suction behind and expulsion before. The crossed bars have the ordinary device for setting, except that it is threaded and provided with two milled nuts, so that the rollers can be set for any degree of compression and held there.

Without having had much opportunity for using the instrument for other purposes, I believe it can be used for any kind of aspiration, by using rubber tubes of various sizes, thickness, and connections for hypodermic and cannula needles, catheters, etc., and enough experience has accumulated to show its practicability. The assemblage for any given purpose is simple, the only difficulty being to have a stock of rubber tubing, glass connections, etc., so as to secure tight fitting for the terminals and to build up to a tube of sufficient size and resilience to provide suction after it has been compressed and released by the passage of the rollers. With such a stock, almost any aspirating problem can be solved quickly in an emergency, the material is inexpensive, sterilization is easy. The tube stripper can be made by any fairly skillful instrument maker for about two dollars. Anyone is welcome to use the general principle described and specifications will be sent to anyone desiring them.

For continuous drainage or aspiration, when it is not necessary to save the contents unmixed with water and in their total bulk, the tube stripper can be eliminated altogether, by using the proper length of tube previously filled with sterile water or salt solution. This would, however, involve elevating the bed or seat of the patient to a considerable distance and might require the use of a stairway or elevator shaft, or boring a hole from one story to another. One point in connection with this is important: I have found it impossible to obtain notes of practical experience, except as to particular cases or very vaguely stated, as to the head necessary for aspirating under different conditions and especially the maximum that may be regarded as safe and the minimum necessary to prevent reflux, especially for the pleural cavity. For the bladder, lower bowel,

an ordinary abscess, etc., the usual distance from bed to floor would undoubtedly suffice unless under unusual circumstances. Undoubtedly most surgeons have had experience as to the maximum and minimum head that would apply to the pleural and other body cavities. If these observations could be collected, with reports of untoward results, the material would be very valuable.

228 SUMNER STREET.

A DISCUSSION OF THE CAUSE AND MANAGEMENT OF PUERPERAL ECLAMPSIA.*

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Many theories have been advanced to explain the cause of eclampsia, which indicates that no one of these theories has proved entirely satisfactory. It seems clear that the light of present day, advanced medicine reveals distinctly that the general underlying cause of this condition is defective reserve force in the woman, a subnormality of the potential energy that is required in the pregnant state. Every system and every cell has a reserve force, has a potential energy that is called to meet the frequently and intermittingly increased demands made upon it. The muscles of the legs have a reserve force; they have a power to meet an emergency that requires unusual speed, such as to catch a moving street car or to run away from a man with a pistol. If muscles did not possess a reserve force they could do no more than a certain, specific, accurately regulated amount of work each day, and that amount of work would be measured exactly by what they are accustomed to do daily. So with the function of the organs concerned in digestion. If our digestive forces could take care of only a specific amount of food which must be exactly the same each day, then our digestive organs would not be able to take care of an extra large meal that we might eat, and consequently we would probably suffer severely as a result of taking this increased quantity of food. As a matter of practical experience, it is known that even with a good digestive reserve force, if digestion is taxed too far, we suffer, which means that the digestive reserve force has failed to meet the demands made upon it. Many other experiences in life show the necessity of every part of the organism having a reserve power, or emergency force.

In the pregnant state the woman is called upon not only to take care of the metabolism of her own body, but to safeguard the metabolism of the developing child. In the process of metabolism many toxins are formed, some of these toxins are converted into inert substances through the activity of certain organs, and others are eliminated by the kidney, by the skin, etc. The mother's organs must dispose of not only the toxins of her own metabolism, but many of those of the developing child, and there is no tissue more active, there is no tissue in which there are greater physicochemical changes than embryonic tissue. In short, the developing child requires of its mother not only an abundant but an increasing amount of properly prepared food to sustain the increasing physicochemical changes that are taking place in its tissue, and also makes an increasing demand upon the organs of her body to dispose of the resulting, increasing toxins generated by the changes in its growing tissues. The vital functions of the mother's organs are taxed by pregnancy more than by any other condition.

The increased appetite of pregnant women is a provision of nature whereby the mother takes more food than her own tissues require to meet the increasing demands for nourishment of the growing child. If the mother's digestion is incapable of taking care of increased amount of foodstuff, if she has not the digestive reserve force to meet the demands that are made upon her to nourish herself and her developing child, she may become reduced in flesh and strength, and have born to her a child of subnormal vitality, or worse, she may be made sick by the absorption of poisonous products, overpowering her agents of protection from the intestinal tract resulting from chemical changes in the imperfectly digested food.

What is true of the organs of digestion is true of other organs. The mother's organs must take care of not only the increased toxins resulting from the increase of the chemical changes of the tissues of her own body, but toxins coming into her circulation from tissues of the developing child. The thyroid, the adrenals, and other structures are possibly gravely concerned in the protection of the mother, but the organs that stand out prominently in our minds as chiefly concerned in this work are the liver and kidneys. This is probably because the pathological changes are most markedly manifested in their structure. The liver changes certain toxic materials into inert products and prepares others for elimination by the excretory organs, chiefly the kidneys. If the liver is unable to meet the increased demand, if it lacks sufficient reserve force, these toxins pass on to the excretory organs, chiefly the kidneys, in increased and perhaps overpowering quantity. They accumulate in the system and produce pathological changes in the tissues of the body, in the structures of the very organs, liver and kidneys, which are chiefly charged with their destruction and elimination. The pathological changes in the liver are not the primary condition, the cause of the eclampsia; the pathological changes in the kidney are not the primary condition, the cause of the eclampsia. The primary cause is simply a defective reserve force, a lack of potential energy in the mother to meet the increasing physicochemical demands of pregnancy.

Clinical observations support this theory. Puerperal eclampsia is more common in the primiparæ, the woman whose reserve forces have never been put to the test. After a woman's reserve power has been tested and has proved equal to the demands of pregnancy we are warranted in looking with increased assurance to her passing safely through future pregnancies. A primipara who has had eclampsia is less liable to have it in subsequent pregnancies than she was in the first, because the

*Read before Alabama State Medical Association, April, 1917.

reserve force has been built up by the first pregnancy. Generally speaking, the capacity to do a thing is increased by repetition, and, therefore, when the first pregnancy takes place the woman's reserve force is built up and is better able to meet and overcome the demands made upon her in subsequent like experiences. The probability is that better care will be taken of a woman after one experience with eclampsia, and this will contribute toward lessening the risk of another such experience. If the child dies in the uterus, the chances of the mother's recovery are increased, because the toxins that are formed by the metabolism of the child's tissues cease with the death of the child, and then the mother only has to take care of her own toxins and those accumulated before the death of the child. It is most desirable, however, to have the child delivered.

Puerperal eclampsia is decidedly more common in a twin pregnancy than in a single pregnancy, because the toxins of two children entering into the circulation of the mother are greater and therefore more liable to overcome the reserve forces of the mother. It is quite plain to my mind that the primary cause of eclampsia is not to be found in the placenta; it is not a diseased condition of the kidney, although if a kidney is diseased it more readily breaks down under the strain; it is not a diseased condition of the liver, but is in general terms a lack of reserve force in the woman to meet the increased demands of pregnancy. If this contention as to the cause of eclampsia is correct, then the management of the condition is quite clear.

In the first place, the physician should take charge of the woman at as early a date as possible and watch her throughout her pregnancy. I do not mean to criticise the profession for not doing this. The people are in a large measure responsible for failure in this regard. They do not think they need a doctor to prevent disease, but only to cure disease. If they would only realize that they need a doctor more to prevent disease than to cure disease, the physician's work would be more satisfactory, their health better, and deaths fewer. If the pregnant woman could be watched from the beginning, the great majority of cases of eclampsia could and would be prevented. In pregnancy the woman's digestion should be safeguarded as far as possible, not by starvation, but by giving her the kind of food that can be easily assimilated, that kind of food from which she can get the greatest amount of nutriment at the least expense to or tax on her digestive forces. Chief among the articles of diet is milk. Milk is the only diet we know of that will sustain life almost indefinitely. In passing I cannot stress too much the importance of drinking water freely and of keeping the bowels active.

In considering the curative treatment of eclampsia there have been a thousand and one preparations to control the convulsions. Discussion of these is not necessary. The woman's system is saturated, as it were, with toxins, and the indication is clearly to bring about their elimination as speedily as possible. If convulsions begin or continue, notwithstanding the use of sedatives and the elimination treatment, pregnancy should be interrupted. In multiparæ, particularly where the cervix is dilated, delivery with forceps is beyond question the best thing. Eclampsia is more frequent, however, in primiparæ. In a case that recently came under my observation as a consultant there was no dilatation, no uterine pains, no beginning labor. The question of Cæsarean section was raised. I do not advocate the reckless resort to Cæsarean section. I recognize that in the home where most of these cases will be managed Cæsarean section is out of place. However, let me stress the importance of taking advantage of the facilities of a well regulated hospital, if available. I believe that in the home the interests of a primipara with an unobliterated and even undilated cervix are best served by bleeding and the use of medicinal agents.

To deliver a primipara before the cervix is dilated is difficult and dangerous and should be undertaken cautiously. Vaginal Cæsarean section does not appeal to me. In my hands, before a vaginal examination was made, I have found abdominal Cæsarean section very satisfactory. It is an easy operation. Hemorrhage ordinarily need give no concern; indeed, more than usual loss of blood may prove beneficial in getting toxins out of the woman. This seemingly was true in two of my cases. Abdominal Cæsarean section, however, will have a high mortality if repeated vaginal examinations have preceded the operation. These examinations carry germs of infection to or into the opening of the cervix from where they readily find their way to the fertile field furnished by the operation. The germs may be picked up even by a gloved examining finger as it enters the vagina, for the difficulty of sterilizing the vulva and vaginal outlet is very great. Abdominal Cæsarean section, therefore, must not be an operation of last resort but an operation of election.

My experience has not been sufficiently long to answer to my own satisfaction the question as to the scar in the womb giving trouble in subsequent pregnancies. Years ago much trouble was experienced in the union of our abdominal incisions. Hernia after hernia followed abdominal operations. We do not have them now because we know better how to close our abdominal incisions. But do we know how to sew up the uterine incision so as to insure against rupture in subsequent pregnancies, and if sewed up properly, is the condition of the uterine tissue such as to make a perfect union? In other words, the woman's tissues are, as it were, water soaked and unhealthy from the effects of the accumulated toxins. Does the uterine structure share in the unhealthy state? If so, what effect will it have on the healing of the uterine incision?

In answer to the question as to whether the diseased condition of the wall of the womb, which corresponds to the diseased condition of the other tissues of the body, will form a fertile field for infection after a Cæsarean section by germs that are in the vagina and vulva. I venture to assert that a woman is less liable to resist infection after Cæsarean section for puerperal eclampsia than after Cæsarean section for obstruction to the passage of the child. To my mind this is another element of

danger attending Cæsarean section in eclampsia.

As to treatment in future pregnancies of women who have had Cæsarean section I do not believe that one Cæsarean section spells Cæsarean section for each subsequent pregnancy. I would be inclined to rely on the forces of nature, unless the personal history of the patient was such following her first Cæsarean section as to cause a suspicion that there was an infection which probably interfered with the proper union of the wound through the uterine wall. This infection may be so mild as not to threaten the life of the woman. If a slow fever with a retarded recovery that could not otherwise be explained followed Cæsarean section on an eclamptic patient, I would feel that something had gone wrong in the healing of the uterus and that a good, firm, and positive union had not been secured. Therefore, in subsequent pregnancies I would be inclined more readily to subject her to a Cæsarean section than I would had her convalescence after the first Cæsarean section been smooth and unsuspicious.

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ACROPARESTHESIA.*

Clinical Studies.

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In 1880, Putnam, of Boston (1), first called attention to a form of paresthesia affecting mainly the hands and feet; he considered it a vasomotor disturbance. Soon after a number of writers described similar cases. To mention but a few, Laquer (2), Omerod, (3), Collins (4), Savill (5), and others have reported cases with their observations. However, it was left to Schultze (6) to use the term "acroparesthesia," when referring to this syndrome, and to differentiate this disease, if such it can be called, from a number of allied conditions.

Acroparesthesia, as the name implies, is a form of subjective sensory disturbance which affects mainly the hands and feet, and occurs chiefly in women. In some cases the tip of the nose and tongue and the back may be involved, as Collins (4) first pointed out. It is noteworthy, however, that only one of our patients complained of the tongue being affected. True acroparesthesia, as described by Schultze (6), is not a very common disease. Among the 3,000 patients whom we examined in dispensary, hospital, and private practice, only forty-two manifested this syndrome. The pathognomonic complaints are the feeling of numbness and stiffness; burning, pricking sensations; sensations of cold in both hands or both feet, or in any one or all of the extremities. As a rule the symptoms become worse at night; the patient is awakened from sleep by them and at times actual pain may develop. Attention should be drawn to the fact that objectively no local change can be detected during an attack; the pulse, the local temperature, and the color of the involved extremities are not altered. The objective sensory examinations are normal. Here and there, writers report hyperesthesias and hyperalgesias, or hypesthesias and hypalgesias, but we have found them all within normal limits, bearing carefully in mind the ordinary individual variations. As mentioned before, the paresthesias are often so severe that they may become actual pain; Schultze (6), however, believes that those suffering from pain should not be classed in this group of acroparesthesia.

While there are no objective motor disturbances, many patients cannot execute fine movements during their seizures. Cassirer (7) believes this clumsiness has rather a sensory than a motor origin. Various writers state that these symptoms are at their worst when the patient happens to have his extremities elevated, an observation we have not been able to confirm. The hands are more frequently involved than the feet. The affection, according to our study, does not follow the distribution of a single nerve, but rather affects the distal parts of the extremities; in the upper extremity it may extend as high as the elbow and in the lower to the ankles. The syndrome is not constant; it may occur at regular or at irregular intervals. Those affected appear otherwise to enjoy good health. As already stated, acroparesthesia, in the strict sense, is a rather infrequent disease. Frankel-Hochwart reports fifty-six cases, according to Cassirer (7) who himself reports forty. The largest number of cases was reported by Collins (4) and his assistant, W. W. Lessem (8). Considering that they included among their cases paresthesias resulting from arteriosclerosis, syphilis, etc., it is doubtful whether all their cases can be considered as true examples of this syndrome. Among our 3,000 cases, examined during the last two years, we had only forty-two of the true type of acroparesthesia.

The influence of age is obvious when we mention that women at the menopause contribute the largest percentage of all cases. Savill (5) gives eighty-three per cent., Cassirer (7) ninety-three per cent. of women and after further observation, somewhat more. He draws attention to the fact that cases among men are atypical; this observation we were able to confirm, having found three men among our series and all three proved to be atypical. Rarely has a case been reported among children. The large majority are found between the ages of forty and fifty-five years, as the following figures show:

Cases between the ages of 40 and 55	25
Cases between the ages of 50 and 60	6
Cases between the ages of 35 and 40	5
Cases at the age of 70	1
Cases at the age of 33	1
Cases at the age of 28	2
Cases at the age of 24	1
Cases at the age of 21	1

The relation of this syndrome to irregular menstruation is evident from the following facts: Thirty of our patients gave a history of such irregularities. Cassirer (7) reports six cases of acroparesthesia following artificial climacterium. We also

*Read before the Neurological Section of the New York Academy of Medicine, May 8, 1917.

had two cases of this type, and in two other cases the symptoms appeared after abortion which was followed by infrequent menstruation. One of our cases was a lactational amenorrhea. Acroparesthesia in pregnant women is reported by almost all the authorities on the subject; this occurred in two of our cases. A girl twenty-one years of age in our series was suffering from severe dysmenorrhea and had distinct symptoms of hypothyroidism. Putting the hands in cold water and the handling of chemicals have been given as provocative causes by some writers. Our patients came mainly from a dispensary for the poor who are obliged constantly to use cold water for household purposes. Consideration of all these factors shows that these causes form only a relationhip in a limited number of cases.

The so called general neuropathic state might be read into this condition, as in so many other obscure nervous diseases, but with Frankel-Hochwart we are disinclined to believe in this very vague etiology. In two of our cases there was an occasional hysteria. The blood pressure does not reveal any abnormalities, systolic or diastolic. One solitary case of arteriosclerosis had a systolic pressure of 180 and a diastolic of 88; this not being a pure case, however, proves the rule.

In attempting to clear up the pathogenesis of this disease as given by the various authorities, we met with a diversity of opinion characteristic of the literature on other functional nervous disorders. Sinclair (9) believes a hyperemia of the cervical cord, occurring during the climacterium, to be the causal factor. Schultze (7) believes that connective tissue changes, in the form of Renaud bodies in the brachial and other plexes, are responsible. Friedman (10) believes that the peripheral sensory nerves are at fault and thinks that the syndrome complex indicates a typical disturbance of the peripheral nervous system. Frankel-Hochwart and Putnam speak of a vasomotor disturbance as the cause. Putnam (11) in his last communication, drags in the Freudian conception, interpreting the disturbance as a psychoneurosis and attempts to translate an attack of acroparesthesia into a dream concept. Solis-Cohen, according to Putnam, believes that a vasomotor paresis produced by some poison is responsible for the disease, but he is not sure as to the nature of the toxemia. Collins expressed a similar view many years ago.

Diagnosis.—Paresthesia is a symptom of a very large number of organic and functional disturbances of the nervous system. It is, therefore, of extreme importance to differentiate acroparesthesia from these by the established methods of examination. In our cases, we have excluded those in which we could find syphilis, plumbism, arteriosclerosis, and all those conditions that lead to definite organic changes in the nervous system. It is important to differentiate this affection from the early symptoms of those vasomotor changes which result in trophic retrogression of the extremities. Raynaud's disease, erythromelalgia, and intermittent claudication should be carefully excluded, which should be easy when we bear in mind the symptomatology of these diseases.

Etiology and treatment.—It appeared from our study of the etiological factors of the disease that ovarian and gonadal disturbances were at fault. For this reason, organotherapeutic measures were given a trial, with striking success. Our procedure was as follows: After establishing normal intestinal elimination and ascertaining that the urine was normal, we administered organic extract, mainly the ovarian and corpus luteum. Those of the hypothyroidal type received thyroid extract, from 0.5 to two grain doses; each of our patients in whom thyroid was used was carefully examined and the effects on the heart observed. Locally, we used faradism, but abandoned it after Patrick (12) recommended the use of Bier's hyperemia at the meeting of the American Neurological Association in 1916. We have learned that pressure must be applied carefully. When too tight or too loose, there was observed rather an increase of, than a relief from, the symptoms. The best manner of applying it is to use pressure up to the point where one gets a diastolic pulse with a stethoscope. In some cases even this was too high and not more than fifty milligrams could be used. The bandage is left for about fifteen minutes to one half hour. In some cases we were also able to secure disappearance of symptoms by superheated air in Turner's apparatus up to about 200° F. for ten to fifteen minutes. The disappearance of symptoms can also be obtained by pressure on a peripheral nerve, such as the ulnar. In all cases where only local treatment was used, the symptoms reappeared in a few hours. This mode of treatment was followed up in twenty-two of our patients between the ages of twenty-three and fifty-seven years. In sixteen, as far as we could ascertain, definite improvement with abolition of symptoms was observed; these patients were between the ages of thirty-five and forty-five years. In two cases following artificial climacterium, the improvement was very striking and rapid and kept up as long as therapy was used. Generally when improvement began it was noticed within two or three days after the administration of the drugs. In one case with high tension, potassium iodide was given, followed by distinct relief; but in this case we knew some organic lesion to be the cause of the symptoms.

It is our belief that the symptoms in this condition are provoked by an abnormal stimulation of the peripheral afferent neurons. The fact that it is provoked by exposure to cold water or chemicals; that it occurs mainly at night when the peripheral circulation is at its lowest; that it is relieved by pressure on a peripheral nerve, superheated air, and Bier's hyperemia, and its tendency to be symmetrical, all would indicate peripheral afferent neurons as being the seat of affection. It has been observed by all writers on the subject that a large number of cases occur in women during menopause, pregnancy, or lactation. Some writers, including ourselves, have met cases during artificial climacterium and with other pronounced pathological changes in the menstrual functions. This etiological factor furnishes us with a therapeutic hint of some value, especially now that we have found by actual experience the value of organic extracts in the treatment

of menstrual irregularities and their accompanying symptoms. In fact, a trial at once convinced us that some of these cases are amenable to opotherapy. From therapeutic sources, it is permissible to infer that acroparesthesia is produced by an irritation of the peripheral afferent neurons, and that this irritant is a result of a faulty metabolism brought about by a change in the internal secretions of the endocrinous, particularly the sexual, glands. The effect of this faulty metabolism is an irritation of the peripheral neurons similar to that which has been shown to exist in tetany. Horsley, Lang, and Mustead (13) showed conclusively that the peripheral afferent neurons are responsible for the attack of tetany, while Vasale, Generali, and later MacCullum (13) and his associates demonstrated with equal certainty that the parathyroids are actually responsible for this irritation.

For evident reasons, animal experimentation will not avail in acroparesthesia. We, therefore, must draw our conclusions from clinical evidences which show clearly that this definite symptom complex occurs mainly in women at a time when unquestionable changes in the sexual glands take place. In conclusion, the value of opotherapy must be accentuated. We are indebted to Dr. I. Abrahamson for his valuable suggestions.

REFERENCES.

1. PUTNAM: *Archives of Medicine*, 1880, iv, 147. 2. LAQUER: *Neurological Centralblatt*, 1883, 388. 3. OMEROD: *St. Bartholomew's Hospital*, 1883. 4. COLLINS: *General Nervous and Mental Diseases*, xx, 585, and *Medical Record*, 1903, lxi, 845. 5. SAVILL: *Medical Record*, lix, 953. 6. SCHULTZE: *Deutsche Zeitschrift für Nervenheilkunde*, 1892-1893, 300. 7. CASSIRER: *Vasomotorische Tropische Neurosen*, Berlin. 8. LESSEM: *Medical Record*, September 1, 1904, 337. 9. SINCLAIR: *Philadelphia Medical Times*, 1884; *Medical News*, 1890. 10. FRIEDMAN: *Deutsche Zeitschrift für Nervenheilkunde*, 1893, 450. 11. PUTNAM: *Journal of Nervous and Mental Diseases*, xliv, 193. 12. PATRICK: *Journal of Nervous and Mental Diseases*, xlvi, 204. 13. Quoted from D. NOE PATON: *Nervous and Chemical Regulators of Metabolism*, London, 1913. 128.

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THE CLINICAL SIGNIFICANCE OF GASTROINTESTINAL TOXEMIAS.*

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Whom and when shall we examine for toxic conditions? While it is unquestionably true that at all times we should be mindful of the possible existence of toxemias in every patient, there are certain symptom complexes which particularly suggest the importance and necessity of attention to possible more or less hidden toxic conditions that are contributing materially to the disease processes which we desire to correct. It is impossible even to enumerate at this time all of the pathological manifestations that would answer this question, but it will serve our purpose to consider certain groups of symptoms that will direct attention to particular forms of toxemia.

I shall first consider certain skin manifestations. It has long been believed that urticaria, psoriasis, certain symptomatic erythemas, some forms of eczema, particularly the more or less acute types, and possibly other skin lesions are the expression of an underlying toxic condition and as uric acid, leucomaines, intestinal putrefaction, or what not has been the vogue these toxemias have successively been charged with being the cause of the skin manifestation.

We are now in the era of protein sensitization and accordingly there is a tendency to dismiss other forms of toxemia and look to this condition as the true underlying cause. There is good reason for directing attention to this cause, as it appears to have been shown conclusively in some instances that there is a close relation between hypersensitiveness of the system to a particular protein, whether of food or bacterial origin, and the cutaneous manifestation, a relationship of such a nature that it seems justifible to conclude that the presence of the protein poison in the circulation of the hypersensitive patient is the cause of the skin lesion. In arriving at this conclusion, consideration should first be given to the history of such attacks, especially with reference to particular forms of food ingested. Occasionally the origin of the hypersensitiveness can be traced to a particular cause, as an occasion when there was an inordinate ingestion of a particular food after which the anaphylactic symptoms appeared, that is, the earlier peripheral irritation being sometimes manifested by the sudden appearance of the rash, followed where the reaction is more severe by a sense of impending danger, interference with breathing, and finally even collapse. Less frequently there are gastrointestinal symptoms, particularly retching and even vomiting. When the onset is acute and unexpected, it may appear as though poisons were present in the food, but when it becomes known that the individual is susceptible to a particular food protein, as in the case of those sensitized to eggs, it must be concluded that this is the cause of the attack. The problem is more difficult in subacute or chronic conditions. Here a long and careful study of the eating habits, with exclusion of suspected foods, preferably one at a time, may reveal the particular protein to which the individual is sensitized.

Recently, the method has been introduced of testing protein sensitization by skin tests with particular proteins. This may be done by inoculation of a skin abrasion with a one per cent. solution of the protein or by injection of a minute quantity of the solution between the cutaneous layers, but not subcutaneously. The latter method, except in very skillful hands, is not without danger, since the introduction may inadvertently be under the skin, when rapid absorption and a general reaction with marked shock and even death in hypersensitive cases may result. When inoculated as described, a positive reaction consists of the production of a localized lesion more or less resembling an urticarial wheal surrounded by a zone of erythema which appears in from a few minutes to an hour. When this reaction is obtained and is not given by a blank control it is the best indication at our command of the fact that the individual is hypersensitive to the protein tested.

It is fair to believe at the present time that urticaria is often, if not always, a symptom of this con-

*Read before the Medical Association of the Greater City of New York, April 2, 1917.

dition. It is very probable that angioneurotic edema is likewise such a manifestation. Other conditions already indicated and disturbances unaccompanied by cutaneous lesions call for a thorough investigation, particularly where there is the least suspicion of food susceptibility.

Nor should it be forgotten that bacterial proteins may be the substance at fault. In these cases there is not the same high degree of hypersensitiveness, so that subcutaneous vaccine inoculation may be practised for treatment without danger, if it is begun with a low count and direct introduction into the bloodstream is avoided. With this latter, however, I have known reactions quite as acute and alarming as are given by individuals hypersensitive to food proteins. The problem presented in investigating sensitivity to bacterial proteins is to locate the nidus of infection and isolate and identify the organism. Where there is a frank lesion, this is relatively a simple matter. Where the infection is in a hidden abscess or sinus or in an unsuspected bowel kink, its recognition may call for most patient search and utmost sagacity, with utilization of complete x ray and clinical laboratory equipment.

A group of symptoms suggested by this last consideration is that associated with arthritic and myositic conditions. It is not my purpose to consider this phase of the subject now, as in the near future in cooperation with others observations upon these conditions will be reported in detail. For completeness, however, I would emphasize now the desirability of investigating actual bacterial invasions from possible foci, remembering that the bones, particularly the marrow, act as filters removing bacteria from the bloodstream and probably affording them opportunity to grow with production of exudate, which may be the actual lesion which the patient exhibits.

Another possible factor in these same conditions is to be found in an entirely different direction. I refer to the failure on the part of the kidneys to eliminate properly the urinary constituents. Passing at this time the extreme manifestations that constitute the uremic pictures, I wish to emphasize the conditions of toxemia that are associated with a failure to eliminate the nonprotein nitrogen compounds, particularly the uric acid. The overemphasis that for years was given to the possible accumulation in the blood of this substance and of the purins in general of which it is the most familiar representative was followed by an almost complete abandonment of the consideration of this factor. With the development of recent technic, however, which now enables us to make accurate determinations of these substances in the blood in a way that is thoroughly practicable for clinical diagnosis, very definite and accurate information has become available which throws a flood of light on certain of our cases. It may now be stated on the authority of exact observation that in certain conditions there is an actual accumulation of the purins, notably uric acid, in the bloodstream. Moreover, it is probable that this is always an early manifestation of a defective renal condition, even though we may have no other evidence of this impending danger. In its most familiar clinical picture, this purinemia is known to us in the gouty manifestations, but its range of symptomatology is far greater than this. Among the conditions in which the increase is to be sought are the chronic arthritic diseases which we have been considering. Indeed, there are few chronic states that present the possibility of an obscure underlying toxemia where, in a thorough investigation of possible underlying causes, it is not wise in completing our survey to include an accurate determination of the nonprotein nitrogen and uric acid of the blood.

With this brief presentation of various toxemias in mind, let us now pass to the consideration of certain toxemias that are particularly apt to evidence themselves in the neurotic and psychopathic patients, namely, those that arise from the absorption of fermentive and putrefactive products formed in the gastrointestinal tract. It is generally conceded that putrid matter is toxic. Indeed, it would seem as though it were a provision of nature that ordinarily putrescence carries with it a foul odor, thereby warning both animal and man that processes of decomposition have supervened, rendering the material unfit for food.

Decomposition of carbohydrate food ordinarily carries with it no such indication of danger, though even in this instance the smell gives notice that fermentation is taking place. However, changes of this kind are in many instances not only tolerated but are even induced to produce foods that are gracious to the palate and acceptable to the system. As examples, note the fermentation of milk and of grain for the production of beverages. However, in other associations, fermentation has come to be associated with undesirable food changes, as in the souring of many cereal foods. In these instances, it is probably not the actual fermentation that is deleterious but the possibility that changes may have proceeded further and that actual protein decomposition has supervened. Likewise, the decomposition of fat does not ordinarily yield deleterious products. Here, too, changes of this kind are in some instances acceptable to the palate, as in the eating of certain ripened cheeses. In other instances, however, the palate rebels, as in the eating of stale eggs, probably not because the early egg changes are themselves harmful, since they are identical with the changes that take place in the fat of ripened cheese, but because in eggs the fat is associated with labile albuminous matter which experience warns us is prone to putrid decomposition.

Putrescence, however, that is, the putrid decomposition of protein matter, is almost if not universally repugnant to the taste, and substances that are undergoing this change are unequivocally pronounced unfit. Moreover, experience teaches that this instinct is well founded; that putrid food many times, if not always, is capable of producing and does produce a poisoning of the system. It, therefore, is in line with general experience that putrid decomposition in the gastrointestinal tract is capable of, and when present does, produce poisonous products. Experimental studies of the products that may be thus formed give credence to this view. The normal process of protein digestion consists of the breakdown of the huge protein molecule into its

constituent parts, namely, into the upward of twenty aminoacids of which it is composed. These may be either wholly free or possibly combined into relatively simple groups of aminoacids, the polypeptids. We no longer hold to the view that protein is ordinarily absorbed as such, or as peptones, but that these latter are stages in the complete breakdown of the protein molecule. The aminoacids themselves are nontoxic. Indeed, they are physiological products of digestion that in the bloodstream either are carried to the tissues, where they are reconstructed into protein; or, if in excess of what is utilized by the body for tissue growth or repair, are deamidized, that is, the nitrogenous portion is split off and converted into urea for elimination, leaving the carbohydrate portion of the protein to enter into carbohydrate metabolism. However, the nontoxic aminoacids under the influence of bacterial growth are capable of yielding basic products, the amines, that are decidedly poisonous. It is to these products, formed by the growth of certain bacteria, particularly the bacteria of putrid decomposition, that intestinal toxemia is largely due. Especially is this true of certain ethylamine derivatives, notably of the aromatic aminoacids of protein breakdown. Thus, the well known tyrosine is changed into the highly poisonous parahydoxyphenylethylamine known as tyramine; histidine is changed into histamine; tryptophane into indolethylamine; arginine into agmatine; leucin into isoamylamine; and phenylalanine into phenylethylamine. In each of these instances the transformation of the aminoacids into the corresponding amine is accompanied by a change in physiological action, a nontoxic substance being transformed into a toxic one. Other changes may occur, but as far as we are at present acquainted with the chemistry of protein decomposition, under the conditions of alimentation, it is the formation of amines or amino bases that makes the material toxic.

Since the effect of intestinal toxemia is at first purely functional and becomes organic only after a more or less prolonged period, and since, too, the presence of these toxic substances in a given instance is determined with extreme difficulty, it is not easy to prove directly the relation of cause and effect. Nevertheless, the evidence that justifies the conclusion is in a measure both experimental and clinical.

In the first place, it is to be noted that the putrefactive amines are pressor substances and as such are capable of raising blood pressure considerably when introduced into the circulation. Again, it has been demonstrated that any drug which has this effect is capable of bringing about degeneration of the middle coat of the arteries. Finally, in a few instances, it has been experimentally demonstrated on animals that the introduction, both by injection and orally, of particular amines has produced typical arteriosclerotic changes of the cardiovascular system, including in Harvey's experiments the remarkable condition of a chronic nephritis resembling in many respects the large white kidney of man. The experimental production in this way of chronic lesions, particularly of the kidney, by a nonirritant substance is of very definite significance as bearing on the question whether this may be brought about by the absorption from the alimentary tract of the amines of putrefaction.

Clinically, there is on the one hand the symptomatic evidence of toxemia such as headache, muscular and mental fatigue, irritability in the ordinary individual and in the particularly sensitive the exacerbation of their individual susceptibilities, be it migraine, epileptic seizures, or some psychical state or other manifestation. On the other hand, there is the morphological evidence or results of the toxemia, first of which are the changes of the cardiovascular system, including the sclerotic kidney.

The effort of Lane to classify cancer as a final stage of intoxication in all probability is justified to the extent that intestinal toxemia exacerbates any such tendency, but it is far too probable that there are associated with cancer growth other factors that are more determining to justify at this time the claim of any specific relation. It is highly probable that it does no more than many other disease conditions, that is, lowers general resistance and renders the subject more susceptible. However, the association of excessive intestinal putrefaction with the various symptom manifestations and pathological changes cited constitutes probably the strongest evidence that the relation to such process is a causal one, at least to the extent indicated.

Just how is intestinal toxemia brought about and how may we know that it is impending or actually exists?

First, as to surgical causes: The proposition that it is due to stasis from kinks due especially to bands advocated by Lane for so many years has not been wholly substantiated. To be sure, an acute condition arises from obstruction that shortly leads to death, but here we are evidently dealing with an acute condition in which other factors play an all important part. The question is, does the slow passage of the intestinal contents which constitute stasis, without the loss of water to the system and without the shock of obstruction, does, in other words, the stasis of Lane's kinks cause a toxemia? Space does not permit me to discuss this question adequately, but I wish to propound two propositions. 1. In so far as the anatomical abnormalities of the intestines delay passage but do not increase the extension upward of bacterial growth, they do not promote intestinal toxemia, though they may, particularly if high up, promote the absorption of unchanged or only partially changed protein, thus in patients with protein sensitization determining an anaphylactic reaction. If lower down, they may promote the passage of bacteria into the system, the low grade infections of Adami, as in the arthritic conditions already mentioned. 2. In so far as the anatomical abnormalities of the intestines delay passage and do increase the extension upward of bacterial growth, they tend to promote both systemic invasions of intestinal bacteria and an intestinal toxemia, the extent of the condition actually established being determined by the character of the intestinal flora and the extent to which it flourishes.

The anatomical abnormalities referred to include not alone kinks producing ileal stasis but stasis from spasm or inhibition of the normal relaxation of the

ileocecal valve, if, as has been claimed, such condition actually exists; and it includes as well the conditions of ileocecal incompetence to which attention has of late been so acutely directed. The extension upward of the colonic contents is particularly apt to establish conditions permitting more extended growth of bacteria and the increase and greater absorption of products of putrefaction. It is less apt to be associated with stasis, promoting low grade infections from the intestinal tract. Finally, the observation of Mutch is not to be forgotten, that the ileal kink may—Mutch says does—act as a protective barrier against ascending infection from the colon. So far as it does this it is a factor in the protection from increased bacterial activity.

A factor to which emphasis is frequently given in the discussion of our subject is the detoxication of the portal blood by the liver. I shall not attempt to repeat or add anything to the well known facts concerning this provision of the economy. It is merely a partial statement of the general proposition that the production of toxic products in alimentation is not alone sufficient to constitute toxemia, but that the defenses of absorption must be overcome. Why and how this is accomplished is another phase of the subject which we shall not now consider.

In the present presentation, it has been my purpose at a time when we are particularly enthusiastic about another form of toxemia, namely, protein sensitization, to call attention to the condition of intestinal autointoxication, which we are apt to forget. The technical difficulty of obtaining adequate data in these cases, the careful study of individual cases necessary to exclude other conditions, and the extravagant and erroneous claims of the Metchnikoff school which overpopularized this subject at the expense of accurate information, should not cause us to overlook this condition as a real factor in many of our cases. It is suggested by the clinical symptoms and is to be further recognized by the intestinal flora and by the products absorbed and eliminated in the urine.

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OPERATIVE TREATMENT OF GUNSHOT FRACTURES.

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It need hardly be said that infected gunshot fractures do not tolerate open operative interference. Practically all gunshot fractures are infected, therefore the field of operative surgery in war fractures is relatively small. In the stage of acute infection no such operative step as the laying on of a Lane plate could be considered except perhaps in the extremely rare instances in which the application of the plate or other metal support, is made through large lacerations of the soft tissues, with the idea of holding fragments temporarily and with the understanding that it must be removed later on. An occasional success with this plan by no means discredits the general statement that the practice is foolhardy. Even in the case of gunshot fracture of the lower jaw, the experience of this war has proved that primary bone suture or wiring is to no good purpose (1). It has been shown in these cases that primary bone suture is rarely effective, that primary healing never occurs, and that suppuration and sequestrum formation always follow. In other words, the primary bone suture in jaw fractures does only harm and no good.

The experience of the present war has demonstrated that for weeks after apparently complete healing of gunshot fracture wounds, the infection lurks in bone and soft tissues about the site of fracture, making any open operative procedure a dangerous undertaking. Fractures plated two months after the disappearance of every discoverable vestige of infection or inflammation have reacted with what bore every evidence of a recrudescence of the old infection. The x ray in these cases revealed no signs of inflammation and none were found during the operation itself. Instances of this kind have been so numerous that some Austrian surgeons have advised against bone grafting or plating in practically all healed gunshot fractures with deformity, suggesting instead, simple osteotomy and subsequent intelligent and persistent employment of extension.

Osteotomy and extension are not only less likely to provoke the recrudescence of dormant infections, but very often this simple method meets every requirement in the way of providing accurate coaptation with good position. An illustrative case was one of our own in which a Lane plating was undertaken for the correction of the deformity of a healed femur shaft fracture with extensive dislocation of the two fragments *ad axin ad latus et ad longitudinem*. There had been no sign of infection for several weeks, the callus had hardened, and the case seemed suitable for a bone plastic operation and one not easily to be corrected by simple osteotomy with subsequent extension. During the course of the operation after the bone fragments had been dissected free, the condition of the patient suddenly became such that he had to be returned to bed without applying the Lane plate as intended. Extension was employed and at the end of six weeks the fragments had reunited in good position. (See Figs. 1 and 2 before and after operation.) Other similar instances have drawn attention to the somewhat unappreciated value of osteotomy and extension in healed fractures with bad position, suggesting that perhaps as the result of American teaching we had come to rely too much upon plates, grafts, etc., using open methods when quite unnecessary, and to some extent positively dangerous.

A gunshot fracture healed but harboring a dormant infection, could hardly be subjected justly to open operation, especially a plastic operation, except upon the erroneous assumption that the infection had entirely disappeared. As it is almost impossible to learn before or even during operation, of the presence of infection in healed cases and in so much as the infection often persists for months with no manifestations whatever, it follows that

open operation in healed gunshot fractures should not be undertaken without due sense of the dangers of lurking infection. The extra manipulation required to complete a bone plastic operation with a plate and the presence of the foreign body, without much doubt stirred up latent infections in several of our cases. Fortunately, removal of the plate with subsequent continuous irrigation with Dakin's solution and extension sufficed to control the infection, which was from the very beginning of its flare up in an attenuated form, the discharge being made up largely of lymph and containing relatively few pyogenic bacteria and pus cells, and to obtain good approximation of the fragments. Such experiences teach a lesson which although in a sense generally understood, is perhaps not sufficiently appreciated, i. e., that open operation in gunshot fractures of the long bones is not indicated before two months at the very least have elapsed after the disappearance of every sign of infection, and then should take the simplest form possible under the circumstances which means osteotomy and extension in a large percentage of cases. In so far as efficient extension, even when begun many weeks after the receipt of gunshot fracture, results in a gratifying proportion of cases in complete cure without deformity as shown by the reports of Finsterer in Austria and by others in practically every country engaged in the war, it is clear that open operation cannot be undertaken with good reason except when extension has failed after intelligent trial and after signs of infection have been absent for months. If simple osteotomy with extension suffices to bring and hold the bone fragments in good position, no one with any experience in treating war fractures would inflict upon the parts the extra manipulation or trauma by instruments which the use of a plate entails. So that even in cases which before incision have been prepared for a graft or a plate, if after osteotomy is done, extension corrects the deformity, then prudence and common sense demand that the operation end there. Nothing has been brought out more clearly by the experiences of Austrian surgeons than that the simplest methods of treating gunshot fractures are the best, by which it is not implied that Austrian surgeons do not use plates or bone grafts when necessary. One of the best evidences that loyalty to surgical art rises above international prejudice, is the fact that the Lane plate is popular in Austria. In the von Eiselsberg Clinic it is preferred in bone plastic operations. Austrian surgeons use the plate when necessary and safe, but only then.

Fig. 1.—Comminuted femur fractures treated by extension.

In the service of the writers in Reserve Hospital No. 8, the Lane plate was used in cases of healed gunshot fractures when simple osteotomy with traction left much to be desired in the correction of the deformity and when owing to dislocation *ad axim* or angulation, it was feared that a dowel graft or intramedullary splint or bone peg might break or become displaced. The plate was used, for example, to unite the pointed ends of fragments in cases in which considerable bone tissue had been shot away or splintered, and in which it would have been difficult or impossible to unite the principal fragments by bone grafting. Wiring was employed in a few long oblique fractures and intramedullary bone grafts were used in all cases in which the shape and position of the fragments were such as to admit of their use, that is, where the medullary canal was fairly well preserved in the ends of both fragments. (See Figs. 3 and 4.) They were also used to bridge extensive defects of the tibia, the graft being of the fractured fibula of the same leg. Cases believed to be entirely free of infection were selected for the intramedullary graft since it is of more serious moment if an intramedullary graft becomes infected than a Lane plate case. It is certainly an important advantage of the Lane plate as applied in gunshot fractures, that if it should become involved in an infection it can be removed under local anesthesia with very little difficulty, whereas the removal of an infected intramedullary graft may require general anesthesia and some time and art for its removal. To a great extent the same objection applies to wire and ferrules.

Fig. 2.—Femur shown in Fig. 1 after extension treatment.

The staplelike bridge of Kroenlein (see Fig. 5), like the Lane plate, may be removed easily in case infection arises or its presence in the tissues is for other reasons undesirable. It was used in one of our cases, being so placed that the long bar connecting the two tines was left outside

the wound, the margin of the wound being closed about the tines. It makes a fair substitute for the Parkhill clamp and other devices in which two pins, each penetrating a bone fragment, are connected outside the wound by wing clamps or otherwise and is open to the same objections that apply to such pins, i. e., a single pin or screw, in each fragment, no matter how long, is not always competent to hold the fragment in alignment. This is especially true where there is a powerful tendency to angulation. In simple cases the staple can be driven through the intact skin after the manner of the Parkhill pins or in suitable cases can be buried like the Lane plate. In our one case the staple was not competent to hold the fragments and it became necessary to apply extension shortly after the operation. Any metal bridge or plate, unless fixed at more than one point in each fragment, may be expected occasionally to allow rotation of the fragment about that point and thus admit of recurrence of the deformity.

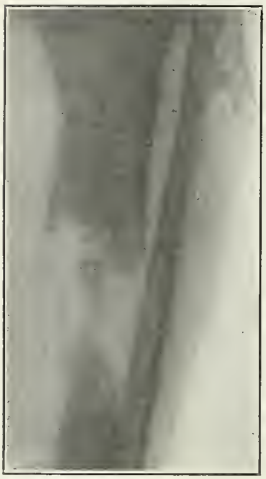

Fig. 3.—Gunshot fracture of tibia with eight centimetres defect.

In completely healed infection free gunshot fractures, the autogenous bone graft represents the ideal method of holding fragments in alignment and coaptation. If an autogenous graft cannot be obtained the slender bones of a dog's extremities or those of a calf may of course be utilized and this has been the practice of several Viennese surgeons, but by far greater convenience and greater safety consist in using bone pencils cut from the edge of the tibia or the diaphysis of the fibula or from some other bone easily accessible. Judging from a limited experience in the use of autogenous grafts for the retention of fragments in good position it has appeared that such grafts cause less irritation and have less tendency to provoke recurrence of infection than do plates or other metal devices.

Whether the transplanted bone heals in as a foreign body and later disappears by resorption as held by Ollier, Gebhardt, and Ullmann, or whether a part continues to live as stated by Marchand and Axhausen, is an old question of no great importance in this connection, in view of the clinical fact that if laid in correctly the graft unites in some manner with the surrounding bone and serves as a support. As advised by Shaffer (2) no more bone should be transplanted than is absolutely necessary, and care of course should be taken that the osteoblastic periosteum is intact along one side or margin of the peg or intramedullary graft. Moreover the grafts should be so cut as to contain as little compact bone as possible for the generally admitted reason that compact bone after transplantation requires a longer time for resorption than does spongy bone, the porosity of which allows the ingrowth of vascular connective tissue and lime bearing osseous trabeculæ. Care should also be taken that no blood or devitalized tissue is interposed between the intramedullary pencil and the endosteum of the fragments since the resorption of such foreign matter must of course precede the ingrowth of vascular connective tissue into the graft.

It is probable that in our cases, the intramedullary pencil served merely as a support quite in the sense that a nail or plate does. The dowel graft, however, if inlaid so that the periosteum of the graft lies in contact with the periosteum of the fracture fragment and with the other bone layers in normal relation actually grows into the surrounding bone. In the case of the intramedullary pencil it is practically impossible to bring the periosteum of the graft into contact with that of the fracture fragment. However, as above stated, the matter of chief importance is that the autogenous intramedullary splint provides good support during the process of union of the fragments, and this it seems to do much better than a dowel graft in so far as our cases were able to illustrate. Though the dowel graft with proper apposition of histological layers grows in, and the intramedullary autogenous bone splint remains in most instances as a foreign body, nevertheless, in fractures with obstinate tendency to

Fig. 4.—Same as Fig. 5 after bridging with intramedullary pencil taken from fractured fibula. Pencil twenty-two centimetres in length.

angulation, the bone peg in the medulla gives the best possible support, the thing most desired. We have not found the dowel graft suitable as a support in any case of fracture with tendency to displacement of the fragments that could not be corrected by extensions. In such cases, the Lane plate or the intramedullary peg have been of great service.

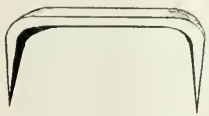

Fig. 5.—Kroenlein staple.

In view of the danger of arousing latent infections in healed gunshot fractures with shortening, Finsterer, of Vienna, has advised that all open operations made during the first year after healing of the wound, should be made not at the site of the fracture but remote from it. He suggests that in cases of fracture of the upper end of the femur with shortening, a plastic operation for lengthening the bone be made in the lower third of the diaphysis. Finsterer lengthened the femur in such cases by employing a method similar to the one in common use for elongating tendons. That is, the shaft is split lengthwise with a circular motor saw and the continuity of the shaft then severed by sawing out the periphery at the ends of the longitudinal cut above to the right below to the left (Fig. 6). He also referred to the method of equalizing differences in length by shortening the healthy leg by means of bone resection where it was impossible to lengthen the injured extremity.

Fig. 6.—Finsterer's method of restoring length of shortened bone advocated by him because of the danger of reawakening infection by operation at site of fracture.

Gunshot fractures which according to the character and force of the vulnerating projectile vary from simple chipping

Fig. 7.—Short anteroposterior and lateral flap methods of amputation provide ample drainage in phlegmon and provide shorter convalescence than the guillotine stump.

or lodging of the missile in the bone to extensive comminution of entire bones will of course occasionally require amputation of the extremity. Virulently infected gunshot fractures as from artillery projectiles, explosive grenades, and shrapnel, may often be cleared up by intelligent conservative treatment with through and through irrigation of some antiseptic nontoxic solution—we used Dakin's solution—and be saved from amputation. However, in the presence of active phlegmon, especially gas phlegmon, the Austrian surgeons have been prompt in amputating. The flapless amputation which Van Buren Knott in America and Fitzmaurice Kelley in England suggested for such cases has found rather general adoption in Austria-Hungary. The flapless or guillotine amputation has without doubt, saved many lives in this war and the objections to its use are not serious. Drainage from the flapless stump is unimpeded and the time required for amputation is at the irreducible minimum. However, we have not often succeeded in pulling the skin down over the raw stump by such simple means as mastesol glue straps, but have usually had to resort to plastic operative procedures to provide cutaneous covering for the stump and frequently have had to reamputate. The operation of reamputation is usually, however, fairly simple, involving as a rule chiefly the bone. In view of the difficulty experienced by the surgeon in covering the defect and the loss of time suffered by the patient, we have in our fractures associated with dangerously virulent infections, amputated by a modified flapless method. A short anterior flap was cut in thigh amputations but no flap made posteriorly so that drainage was quite as free as in the guillotine amputation and the covering of the raw stump was made much easier. Another modification of the flapless amputation consists in cutting quite short lateral flaps or more accurately speaking, short anteriolateral flaps (Fig. 7). Here

Fig. 8.—Fracture of femur caused by falling boulder on Italian front.

Fig. 9.—Same as Fig. 8 after plating.

also drainage is good. The only advantage possessed by the guillotine method over such modifications is that the circular flapless amputations close somewhat more quickly.

REFERENCES.

1. MAYRHOFER: *Wiener klinische Wochenschrift*, 1916, No. 8.
2. SHAFFER: *Wiener klinische Wochenschrift*, 1916, No. 22.

THE BRADFORD FRAME IN THE TREATMENT OF BUTTOCK AND HIP INJURIES OF WAR.*

By Kellogg Speed, M. D., F. A. C. S.,
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Confinement to bed after lacerated buttock or other wounds involving the posterior hip region, with or without bone involvement, becomes irksome to patients. When the wound is large and infected, as practically all war wounds are, the necessary

Fig. 1.—Wound of inner aspect of thigh. Difficult to keep clean and free from pressure. Wound of entrance on outer side of thigh.

manipulations for dressing, irrigation, and use of the bedpan cause severe pain. Pus accumulates rapidly; the patient lies in a soggy dressing which forbids free drainage from the wound surface and favors secondary infection from fecal contamination. No matter how frequently moist dressings are applied nor how thoroughly irrigation is practised, these conditions will be present, and no binder nor many tailed bandage can be applied satisfactorily to the wounded man.

After observing several of these patients literally lying in their own pus or stretched out in the tiresome prone position, I made an effort to make them comfortable. Mental comparison was made to patients in civil practice on whom bone transplants had been inserted in the neck of the femur for ununited fractures. Such patients are put in body plaster encasements with a suitable opening about the anus and genitals, the legs are held in abduction so that a nurse may tip the whole stiffened body over on one side and slip a bedpan beneath without much effort. No soiling of the bed or patient follows this procedure. It was evident, however, that it would be impossible to place patients with these large wounds in any such dressing, nor did I believe

Fig. 2.—Transverse buttock wound laid open for drainage and irrigation. The impossibility of constantly lying on the left side to keep the wound exposed is apparent.

it advisable to perform inguinal colostomy to avoid fecal contamination and possibly tetanus. (See Figs. 1, 2, and 3.) A search in our splint supplies revealed several Bradford frames which had never been used and they seemed to fill the requirements of safty, comfort, and dressing for these wounded men.

Most war wounds, profusely suppurating, are best treated by open air exposure with irrigation. The Bradford frame then had to meet the following sur-

Fig. 3.—Longitudinal buttock wound. Area exposed is large and discharge very free. Healing is long continued. These injuries are received not while running away from enemy fire, but while lying prone under orders to avoid bursting shells.

gical and hygienic demands: 1, exposure to drying and healing effects of open air; 2, nonretention of discharges against the wound; 3, a simple, easy, and free exposure to irrigation; 4, a minimum disturb-

*From material obtained while officer in command of the Surgical Division, 23rd General Hospital, British Expeditionary Force, France, 1916. Major Speed is now with Base Hospital No. 12, U. S. Army, France.

ance of the patient for dressing, irrigation, or use of bedpan; 5, the patient's comfort in a normal position; 6, avoidance of soiling bed linen by irrigating fluids and discharges (see Fig. 4); 7, easy observa-

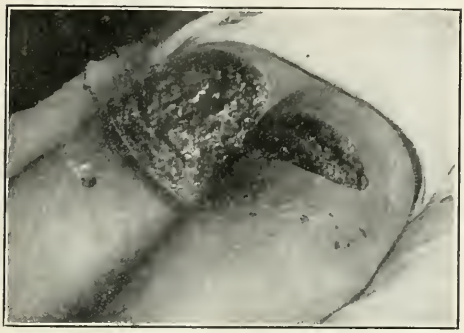

Fig. 4.—Double buttock wound opened for drainage. No position except the prone one is possible with customary dressings or a protecting cradle.

tion of and quick access to secondary hemorrhage. Frames were prepared with the canvas divided into two parts, the opening approximating that necessary

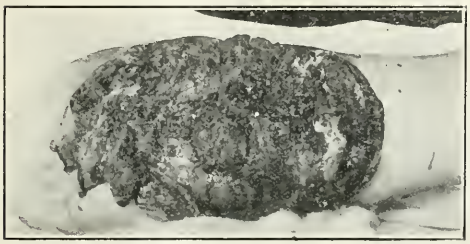

Fig. 5.—An enormous wound of the upper thigh and buttock 24 inches long. No serious bone involvement. Application of dressings very painful.

to fit the wound treated. By means of pillows the patient was made very comfortable on the sling thus arranged and the wounded area was left free

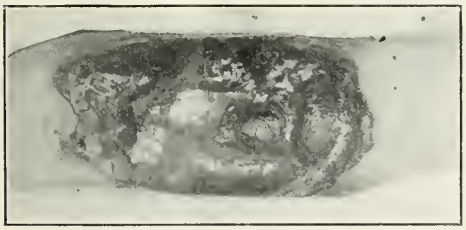

Fig. 6.—Same wound thirteen days later after open treatment and constant irrigation with easol (hypochlorous acid solution). Note the rapid granulation.

in the opening, the frame being supported some six inches above the bed level (Fig. 7) on firm blocks. If extension was needed for femur fracture it could be maintained while the patient lay thus. An irrigating can with rubber tubing was easily installed so that a constant drip or an intermittent flushing over the wounded area could be accomplished. On the bed beneath this surface a

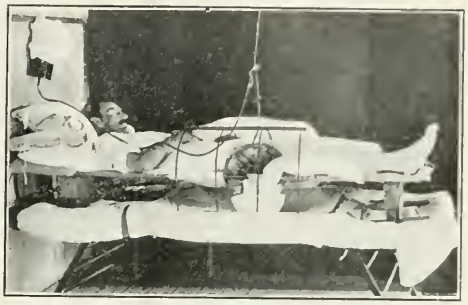

Fig. 7.—The manner in which this wound was treated on the Bradford frame. Patient comfortable in a normal position. Frame elevated from bed surface. Constant irrigation on open surface. No dressings; cradle protecting from bedclothes. Bowl on bed catches discharge. This patient contracted tetanus even with this open treatment and a prophylactic dose of antitetanic serum, but made a recovery.

bowl of suitable size was placed to catch the discharge. The bedpan was easily slipped under the patient and used without any disturbance. If the wound threatened secondary hemorrhage it was left without any cover so that the nursing sister could give it a glance in passing and see the first signs of serious oozing. This seemed a necessary precaution to take after I had nearly lost two patients from secondary hemorrhage into thick bound on dressings and the bed (Fig. 8).

After these surfaces become clean and start to granulate, they can be strapped together or secondary approximating sutures can be inserted, and in proper time the patient can be taken down off the frame and dressed with dry gauze in an ordinary

Fig. 8.—Close up view of a severe gunshot of the left buttock and greater trochanter of the femur with fracture. Note the patient's elevation from the bed, the opportunity for free drainage of the wound and the apparent relaxed comfort. Recovery.

bed. I trust that those who enter active military service will bear this method in mind and give it a fair trial.

CREOSOTE CARBONATE AND QUININE IN PNEUMONIA.

By Charles M. Nice, M. D.,
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Cassoute, of Marseilles, introduced creosote carbonate in 1898 for use in the treatment of pneumonia and since then numerous internists have vouchsafed for the especial efficacy of the drug. I. L. Van Zandt reported a collected series of cases thus treated which showed only five per cent. mortality. Charles E. de M. Sajous advocates ten to fifteen grains at two or three hour intervals and ascribes the almost specificity of the drug to its depression of the sympathetic centre, dilatation of the arterioles and consequent freer distribution of blood to the diseased area. It also stimulates the test organ he says, promoting the production of autoantitoxin. Quinine is said to act much like creosote carbonate and has been lauded by various writers at different times as an extraordinary medicinal agent in the treatment of pneumonia. Some European physicians insist upon extremely large doses of from fifty to sixty grains. From my own experience of these two drugs I am surprised that they are not more commonly used and written of.

Some time ago I adopted the combination of quinine hydrochloride and creosotal in a series of thirty-two unselected cases, at the same time treating thirty-two cases by other methods in vogue, and I have been wonderfully surprised with the results in the comparison. The quinine was given in doses of five grains with five to seven minims of creosotal every three hours and the dose decreased according to age. The only additional drugs used were caffeine or camphorated oil in a few at or about the time of the crisis and never as a routine or for any length of time. Fresh air and forced feeding were the adjuncts of this treatment. No symptoms of cinchonism, gastric discomfort, or urinary changes were noticed at any time and on the other hand delirium and nervousness were not seen in any of the number. The ages of my patients ranged from one year to sixty-eight. There was one death, probably due to an embolism occurring suddenly in the case of a man twenty-two years old, in whom the treatment was started after an indefinite period following the onset. The children appeared to take the treatment as readily and with as quick response as did the older patients. In these cases either euquinine or cocoa quinine was used in doses of two to four grains in combination with two to five minims of creosotal. Complications were noted in two patients only as an empyema, both of whom were operated on and went to a successful recovery.

The most remarkable point was the rapidity of the crisis, which in a number of cases was replaced by a twenty-four hour lysis and in none did the frequent shock and depression appear which is usually associated with a crisis. The majority of these occurred the second and third days after treatment was started. In some instances the change was so sudden that the diagnosis had to be definitely reconfirmed. In five children thus treated and purposely not included in the table, the temperature dropped and recovery proceeded in twenty-four hours after the treatment was instituted.

Case Number.	References.	Age.	Sex.	Day treatment instituted.	Type of disease.	Temperature fell by..	Day of normal temperature.	Complication.	Results.
1	O. L.	68	F.	2nd	Small area	Crisis	4th	None	Recovery
2	Arthur	19	M.	2nd	Single	Crisis	4th	None	Recovery
3	Sol. 1	20	M.	1st	Single	Crisis	3rd	None	Recovery
4	Sol. 2	24	M.	2nd	Single	Lysis	4th	None	Recovery
5	Thor.	5	F.	3rd	Single	Lysis	5th	None	Recovery
6	Neg.	20	M.		Double (aortic regurg.)	Lysis	5th	Embolism	Death
7	Anderson	2	F.	3rd	Double	Lysis	5th	None	Recovery
8	Auton	23	F.	2nd	Single	Crisis	5th	None	Recovery
9	Brunly	57	F.	1st	Single	Crisis	4th	None	Recovery
10	Conk	9	M.	2nd	Double	Crisis	3rd	Empyema	Recovery
11	Donahoo	40	F.	1st	Single	Crisis	3rd	None	Recovery
12	Gilmore	36	M.	1st	Single	Crisis	4th	None	Recovery
13	Hole.	9	M.	1st	Single	Lysis	4th	None	Recovery
14	Horton	2	F.	1st	Double	Crisis	3rd	None	Recovery
15	Hunter	18	M.	1st	Double	Crisis	3rd	Empyema	Recovery
16	Reeves	14 m.	M.	1st	Single	Lysis	3rd	None	Recovery
17	Rem.	38	F.	1st	Single	Lysis	4th	None	Recovery
18	Stov.	2	F.	1st	Broncho.	Lysis	7th	None	Recovery
19	Bue.	63	F.	1st	Single	Crisis	4th	None	Recovery
20	Young	37	F.	2nd	Double	Crisis	5th	Miscarriage	Recovery
21	Aker	19	M.	2nd	Double	Crisis	6th	None	Recovery
22	Chris	28	M.	1st	Double	Crisis	4th	None	Recovery
23	Cor.	13 m.	M.	1st	Double	Crisis	5th	None	Recovery
24	Dav.	42	M.	1st	Single	Crisis	4th	None	Recovery
25	Den.	18	F.	2nd	Broncho.	Lysis	9th	None	Recovery
26	Echol.	31	M.	3rd	Single	Crisis	7th	None	Recovery
27	Flem	65	M.	2nd	Double	Crisis	6th	None	Recovery
28	Field	20 m.	M.	1st	Double	Lysis	7th	None	Recovery
29	Hend.	13 m.	M.	1st	Broncho.	Lysis	10th	None	Recovery
30	Inf. "A"	15 m.	F.	2nd	Single	Crisis	5th	None	Recovery
31	Inf. "B"	31 m.	M.	3rd	Double	Crisis	5th	None	Recovery
32	Inf. "C"	9 m.	F.	1st	Single	Crisis	3rd	None	Recovery

The mortality did not differ from a similar number treated in other ways, there being one death only in each series. The duration was so much shorter with the creosotal and quinine, the toxemia so much less, the complications so much less frequent and the convalescence and recovery so much quicker, that I am free to say that for the time at least I am in favor of the routine empirical use of these two drugs, especially when the disease is treated in its early stages. Since the above report was made six similar cases have been added thereto with crises before the fifth day and without complications or death, making a total of thirty-eight.

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Medicine and Surgery in the Army and Navy

THE FIELD HOSPITAL.

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Medical help for the sick and wounded with armies in the field is divided into two classes: that given in the zone of the line of communications and that in the zone of the advance. These zones will bear a slight explanation. In the American army a division of troops, about 26,000 men, is the great administrative unit. It forms the model for the organization of the administrative service of smaller units operating independently. All the territory in which its troops—infantry, cavalry, artillery, and special troops—and ammunition, supply, sanitary, and engineer trains operate is called the zone of the advance. All territory along a prearranged line of supply for this division, beginning at the zone of the advance and ending at a place called the base, is termed the zone of the line of communications.

One of the great duties of the medical department in time of war is to give temporary care and professional treatment to the sick and wounded in the zone of the advance and, except minor cases, transport them with as little delay as possible to the zone of the line of communications. To perform this duty there are four surgeons, thirty-three enlisted men, Medical Department, with each regiment, and a proportionate number with other troops; also four field hospital companies, four ambulance companies, and four camp infirmaries with each division. A wounded man, say in the trenches, is given first aid there by the regimental medical staff and during a lull in the firing or at another suitable time is transported to a sheltered place in the rear of the regiment called the regimental aid station. Here he receives further care and meets other wounded soldiers who have been collected at this point. At favorable times litter bearers from ambulance companies visit these regimental aid stations and transport the wounded unable to walk to the ambulance company dressing station. This is done by hand litter usually, by wheel litter, by ambulance if possible, or by any other means of transport available. At the dressing station the wounded man receives nourishment and further professional care if needed. Ambulances ply back and forth, carrying the wounded from the dressing station to the field hospital. The field hospital is the last link of the sanitary chain in the zone of the advance. The next link is the evacuation ambulance company, a transport column which passes the wounded from field hospitals to the evacuation hospital, the first hospital in the zone of the line of communications.

Fortunate indeed is the wounded man who arrives at a field hospital in fairly good condition, as real hospital attention begins at this point. Yet the hospital equipment, though ample, must be meagre, as a field hospital is a part of the division and must, if possible, advance and retreat with it. Consequently the field hospital carries no cots, beds, or other heavy hospital equipment. Each patient gets a bed sack and pillow sack filled with hay, straw, grass or other available material, a rubber blanket to place under this, a blanket, and in certain cases a suit of pajamas. The field hospital is well supplied with food, medicines, dressings, and field surgical equipment; also with proper equipment to make and preserve individual records of sickness and injury in order that future claims may be adjusted with justice to the Government and to the individual. The capacity of a field hospital is 216 beds.

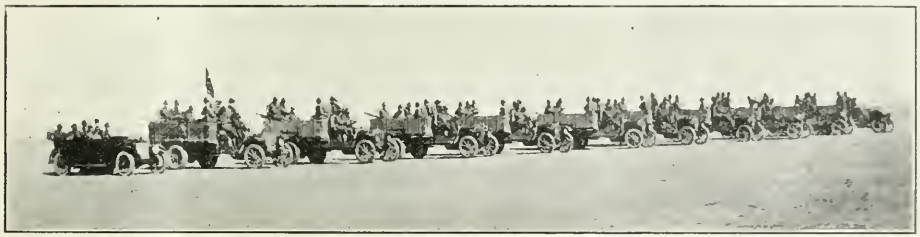

Fig. 1.—A motor driven field hospital company. Six surgeons and eighty enlisted men of the medical department form its staff.

Of the four field hospitals with a division two are motorized and two are animal drawn. The transport equipment of the motorized field hospital consists of eleven one and one half ton trucks and two motorcycles. The field hospital shown in Fig. 1 has a touring car instead of two motorcycles. When a field hospital is motor driven both the personnel and equipment are carried. The personnel of a motor field hospital company consists of one major and five captains and lieutenants of the Medical Corps or Medical Officers' Reserve Corps, three sergeants first class, six sergeants, two cooks, one mechanic, and sixty-eight privates first class and privates, Medical Department. The transport equipment of an animal drawn field hospital company consists of seven one and one half ton wagons with four draft mules for each wagon and two extra, and twenty-two riding horses. As to personnel there are one major and five captains or lieutenants of the Medical Corps or Medical Officers' Reserve Corps, three sergeants first class, six sergeants, one horseshoer, one saddler, one farrier, one mechanic, two cooks, and sixty-five privates first

class and privates, Medical Department. All the personnel of this field hospital march on foot except the medical officers, noncommissioned officers, orderlies, cooks, and drivers. (Se Fig. 2.) These staffs perform all duties connected with the field hospital. They are under the immediate orders of the director of field hospitals, who correlates their activity under the supervision and direction of the division surgeon.

When a field hospital is opened the following departments are established: dispensary, kitchen, receiving and forwarding, slightly wounded, seriously wounded, operating room, mortuary. All wounded arriving or departing pass through the receiving and forwarding department in order that proper records can be made. Under ordinary battle conditions operations at field hospitals are only such as are needed to fit the patients for transportation to the rear. All operations are done under the strictest antiseptic or aseptic precautions and every effort made to dress wounds so that they will not require redressing for some time. Every opportunity is taken to relieve the field hospital of its wounded, as an order may arrive at any time to advance or retreat. When the number of wounded is great and transport facilities to the rear are bad, or when nontransportable wounded are present it may become necessary to immobilize a section or all of a field hospital or even several field hospitals. In such an event the line of communications takes over and administers these hospitals and gives the division duplicate equipment.

The field hospital is a tent hospital. Its 216 beds are placed in six tents called ward tents. Each tent is sixteen feet wide and fifty feet long. (See Fig 6.) Four other tents called hospital tents, ground area about fourteen by sixteen feet, each house the dispensary, office, operating room, and stores. The kitchen is placed under a tent fly. Whenever buildings are available for use by the field hospital the tentage is not pitched. As quickness in pitching and striking a field hospital is of prime importance in preparing to receive patients or to make a quick departure, these procedures have been developed in the army to a high state of proficiency. Not long ago an army field hospital pitched its huge amount of canvas and was prepared in every detail to receive patients in fourteen and a half minutes. Fig. 3 shows the tentage ready for erection.

The pitching of a field hospital includes the following operations: Six ward tents are pitched. The store tent, operating tent, office tent, kitchen and kitchen store tents are pitched. These tents are the official hospital tents with jointed ridge poles and projecting flies. All equipment for one ward is added and nine beds are laid out. The operating table in the operating tent is set up, a fire started under the instrument sterilizer with instruments in water therein, operating table arranged with sheets and towels, and other operating equip-

Fig. 2.—An animal drawn field ambulance. Its staff is the same in numbers as for the motorized field hospital.

Fig 3.—Pitching the field hospital. The tentage is spread out ready for raising.

ment placed adjacent. The operating surgeon dons an operating gown and rubber gloves, his assistant a gown only. The kitchen field range is placed in proper order and position in the kitchen, a fire started and coffee and soup placed on to boil. A garbage pit is dug; wagons are parked; every storm guy is in position. Every hood is facing in one direction. All corner uprights are in position and

FIG. 4.—A field hospital completely erected. Its capacity is 216 bed patients.

all tent uprights in alignment. Every wall pin and guy pin is driven into the ground in good alignment, every wall loop and guy rope placed over its proper pin. Every ward and hospital tent door is tied back open. All axes and extra pins are collected and placed near the front door of each tent. The twenty litters belonging to the field hospital equipment are stacked in front of the office tent; also six guidons placed in proper position to direct patients to the hospital. Fig. 4 shows a field hospital completely erected and ready for patients. After all patients are discharged or transferred it is usually necessary to strike the field hospital and move elsewhere. The striking of the field hospital, loading of equipment, and leaving the hospital site has been done in six minutes. The following operations were completed in the six minutes: striking all tentage; folding and tying all tentage according to authorized methods; sacking

FIG. 5.—An animal drawn field hospital packed in its seven wagons ready to march.

all tent pins; all equipment mentioned in the pitching loaded upon wagons, the loads partially lashed, all wagon sheets placed in position, and the wagons moved off the hospital site; the hospital site thoroughly policed and nothing left behind except the tent pin holes. (See Fig. 5.) Our field hospitals are well organized and will give a proper account of themselves whenever brought into active service.

THE MEDICAL OFFICER IN ACTION.

In an interesting article in *The Sun*, June 17, 1917, John Walker Harrington says: The military surgeon, according to that revised art of war which began to be on a fateful August day three years ago, is no longer the neutral ministrant to the wounded. He is a leader of men, for he sustains the morale of troops, he restores the slightly injured as speedily as he may to the fighting line, and he fits his fellow soldiers for their trade.

When the war began many of the best surgeons of both England and France were sent to the furthest front. So many of the profession have lost their lives that in these days when a skilled and experienced surgeon is worth as much to an army as a colonel, to quote the words of Dr. Frederick H. Albee, who has recently returned to this city from the European battle fronts, every effort is being made to protect the surgeons. Army surgeons who are serving with the battalions are instructed to fall back in the event of a retreat and not to try to stay with the wounded, as their capture would deprive the service of their help in the restoration of the slightly wounded to the fighting line.

Turning over the pages of the London *Lancet* brings to light casualties among the army surgeons. A special department is devoted to the losses sustained by the medical personnel each week. Both old and young are on the muster roll of death. Here, for instance, is the record of Captain Joseph Ellis Milne, "killed in action in France." He met death at his aid post in the first trench, where he had given instructions that no wounded man was to be removed unless he had first seen him. Captain Hamilton Mathewson, a physician of the Medical Corps,

as was Captain Milne, was mortally wounded by a German sniper as he was attempting to aid a wounded man in front of the firing line. He died in four days. It is set down that Lieutenant Thomas Jones, M. D., was killed in action because he insisted on ministering to men who were so seriously wounded that they could not take shelter from shell fire which he braved. He was killed while striving to drag a wounded soldier from No Man's Land.

Together with the chronicles of death in the discharge of duties go many records of rewards for personal bravery. There are hundreds of the British army surgeons who have won a place in the Distinguished Service Order and many have received decorations for bravery both from England and France. Conspicuous for gallantry on the field of battle is Dr. David E. Wheeler, son of Everett P. Wheeler, a lawyer of this city. Doctor Wheeler was practising his profession in Buffalo at the outbreak of the European war. He was the first of the American surgeons whom *The Sun* sent to France with money supplied for that purpose by the Duchesse de Tallyrand. After service in several battles he enlisted as a private in the Foreign Legion, where he acted also as a regimental surgeon. Doctor Wheeler performed his duties with especial coolness and bravery at the battle of Champagne, where he was badly wounded in the leg by a fragment of shell. Although suffering agony, as bones were shattered, he crawled back from the front for four miles, stopping on his way to give first aid to wounded comrades or to administer hypodermic injections of morphine to ease their pain. For this deed he received from the French Government the Croix de Guerre. After recovering from his wounds he spent three months working for the American Ambulance at Neuilly and he is now attached to the military hospital in Reading, England.

Fig. 6.—An army ward tent. This tent accommodates thirty-six bed patients.

Lord Northcliffe in his recent book *At the War* devotes a chapter to the army surgeons, who within the danger zone and often in dugouts and underground hospitals directly on the firing line were dressing the wounds of men just brought from the trenches. In one case a section of captured German trench work had been converted into a subterranean hospital, to which the men were brought for the first dressing of their wounds. The enemy had evidently the range of the place, for within a few minutes shells had been planted near each of the four corners. This may have been with the view to destroying it, or again there may have been enough grim humor on the part of the Germans to notify the English to be good.

The whole scheme under which the wounded are removed from the field of battle and sent to places of at least comparative safety puts tremendous work and responsibility on the modern army surgeon. First of all are the regimental aid posts in the thickest of the fight, where there is time only for the attentions from the medical officer. At advanced stations the surgeons reapply dressings when necessary, sorting the cases into groups and forwarding the severely wounded to the main casualty station and those of slighter nature to the corps main dressing room. Every sufferer before he gets as far back as the casualty station receives an injection of 500 units of antitetanic serum, and at the base hospital a second injection is given.

The fact that there are so many agencies for the relief of the wounded within what is really a danger zone is commented upon in the recent report prepared by Dr. Charles L. Gibson for the New York Hospital, where he is attending surgeon. Doctor Gibson has lately been at the front both in France and Belgium. "The close proximity to the trenches," he says, "of a thoroughly equipped and organized institution, comprising a picked personnel and the highest possible surgical skill, means giving to the unfortunate victims of the war the maximum of relief. In most cases the promptness with which the effects of the dangerous wounds are remedied renders possible the saving of not only a life, but prevents great disability and suffering. As a typical example of the perfection of the system I saw a soldier who at three o'clock in the afternoon received a shell wound while serving in the trenches. He was promptly carried out of the trenches, received efficient first aid dressing, was brought to La Panne by a skilfully driven automobile ambulance, notwithstanding the possibilities of being hit on the way, was examined by Professor Depage in person, x rayed, surgically cleansed, anesthetized and operated upon at once with the aid of the x ray plate which had been promptly developed. After fragments of shell which had been deeply embedded in the tissues were removed he was put to bed and at 6:30 o'clock that very evening he was ready to begin a comfortable and uneventful convalescence."

Thousands of practitioners in this country, including many who have abandoned fine practices in the city of New York, are closing their offices and joining the army. The muster roll at Fort Benjamin Harrison, at Indianapolis, shows that many an office in this metropolis has been closed and that its former tenant is now making his preparations for service with the armies. Leaders in the profession in New York are ready to pack up and to join Pershing at the head of units which have been prepared with the greatest care. All recognize that upon them rests the task of renewing the life of the army, of preventing wastage and of keeping up the fighting edge. They go as officers on a mission of inspiration and help, and if degrees of chivalry there be, surely they will find the highest among their brother Knights of the Great Adventure.

MEDICAL NEWS FROM WASHINGTON.

Plan of Instruction at Medical Officers' Training Camps—Physical Examination of Drafted Men—Work of the Sanitary Branch of the Bureau of Medicine and Surgery.

WASHINGTON, *July 23, 1917.*

Among the most important work now being carried on under the surgeon general of the army is the instruction of newly appointed medical reserve officers, who are destined for duty at cantonments and with the forces in the field. This is under the general charge of Colonel Henry P. Birmingham, Medical Corps, with Lieutenant Colonel Edward L. Munson, Medical Corps, as principal assistant There are three main training camps for medical officers: at Fort Riley, Kans., under command of Major William N. Bispham, Medical Corps; at Fort Benjamin Harrison, Ind., under Major Percy M. Ashburn, Medical Corps, and at Fort Oglethorpe, Ga., under command of Lieutenant Colonel Henry Paige, Medical Corps. Each of these camps has a capacity of 1,000 student medical officers. There also is a training camp for colored medical officers at Des Moines, Iowa.

At each camp there are four ambulance companies, four field hospitals, one evacuation hospital, and six regimental detachments. Authority has been given to organize ten regimental detachments of colored men at Des Moines. In addition, there is a class of some 150 medical officers under training at the camp at Allentown, Pa., where ambulance companies are being organized for service abroad, under charge of Major Elbert E. Persons, Medical Corps. The total enlisted strength at these camps at present is about 12,000. The course at the camps is intensive, occupying about eight hours a day, with lectures and special exercises in the evening, and it will last for three months. The course is divided so that during the first month the instruction is in the work of the enlisted men of the medical department so as to fit the student officers for duty as instructors, and to this end the work is practical and thorough. The second month is given over to the duties of medical officers proper, and the third month continues this with amplification of work in the field, such as the conduct of ambulance companies, field hospitals, etc. The student officers are organized in provisional companies of 150 men each, with officers and noncommissioned officers appointed from their number.

At each camp there are ten regular medical officers as instructors and in charge of administration, who are assisted by physicians and surgeons from the Reserve Corps and from the medical departments of the National Guard. Later, upon qualification of the student officers, these more experienced physicians and surgeons will be relieved and assigned to other duties. The course is so framed that officers may be in readiness for work in the field and at posts, and it is desired to have them qualified for this duty on sudden call. The three main training camps are organized effectively with a capacity of producing about 12,000 thoroughly trained medical officers annually. Selected officers are being relieved from duty at the instruction camps from time to time and sent to other places for special training, to the Rockefeller Institute for Medical Research, New York, for instruction in laboratory work, and to Richmond, Va., Kansas City, Mo., Boston, Mass., and Cornell Medical College, New York, for instruction in military röntgenology.

It is considered by the army medical authorities that one of the most important factors in the efficiency of the national (drafted) army is the preservation of the health of individuals and the elimination of the physically unfit. The physical examinations of those that are drafted for this force will be conducted by local boards, and it is anticipated that there will be passed on to the cantonments a certain percentage of men that afterward will be pronounced disqualified for active service.

Plans have been made by the surgeon general of the army to maintain by the aid of specialists as rigid and thorough a system of personal scrutiny as is possible, with a view to determining those that in any way may prove an impairment of the new fighting personnel. It is desired to identify, as unfailingly as may be, those that shall be regarded as unfit because of the presence of tuberculosis, heart trouble, defective sight or hearing, and mental defects. The last are believed to be the most difficult to recognize and require the services of the most trained observers. It is planned to have the personnel of the national army on the highest plane of physical fitness, and it is to that end, as a contribution to the efficiency of the force, that the army medical authorities are working diligently. Special attention already is being given to the identification of cases of tuberculosis among the personnel of the regular army and national guard now in the federal service and of the remainder of the national guard about to be brought into the service. To this end, boards of experts, some of the Medical Reserve Corps and some contract surgeons, have been directed to convene at various posts and camps, including the training camps for reserve officers destined for the staff, cavalry, field artillery, coast artillery, and infantry of the national army.

Reports coming to the Navy Department Bureau of Medicine and Surgery already indicate gratifying results from the new sanitary branch of that bureau, under which officers of the Public Health Service have been assigned as sanitary inspectors in all of the naval districts. They send in periodical reports of conditions prevailing at navy yards, naval stations, and at other places under the jurisdiction of the Navy Department, and as well among the residents of the neighboring communities. The information is being recorded graphically on a map in the surgeon general's office to show at a glance the prevalence of various epidemics It has not been overlooked that disease in the civilian population is destined to have an appreciable influence upon the health of the newly enlisted men. This has been the cause of some of the outbreaks that occurred when the navy was recruited in such large volume and so suddenly, as was necessary on account of the increase of the allowance of the personnel. All of the epidemics are under control, and the only trouble that now is experienced, and that to a minor extent, is mumps which, on account of necessary detention of the patients, interferes with their military training.

Editorial Notes and Comments

NEW YORK MEDICAL JOURNAL
INCORPORATING THE
Philadelphia Medical Journal
and The Medical News
A Weekly Review of Medicine

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Address all communications to
A. R. ELLIOTT PUBLISHING COMPANY,
Publishers,
66 West Broadway, New York.

Subscription Price:
Under Domestic Postage, $5; Foreign Postage, $7; Single copies, fifteen cents.

Remittances should be made by New York Exchange, post office or express money order, payable to the A. R. Elliott Publishing Co., or by registered mail, as the publishers are not responsible for money sent by unregistered mail.

Entered at the Post Office at New York and admitted for transportation through the mail as second class matter.

Cable Address, Medjour, New York.

NEW YORK, SATURDAY, JULY 28, 1917.

PRISON REFORM AND SOCIAL HEALTH OR DISEASE.

Selfinterest is so fundamental and inevitable a principle of action that prison reform based upon it may promise at last effective stimulation to society at large. A candid recognition and admission of this egoistic starting place for reform is the first great step to a true and effectual altruism. Prison conditions and prison reform have succeeded in awakening a certain public concern, in part a sentimental deploring of conditions and a sincere desire that they should be otherwise. In large part, however, public opinion avoids these things by an equally deplorable ignorance or shelters itself on the side of superior moral position by the very measures which continue the long existent state of things. Nevertheless sentiment and this indolence of ignorance resolve themselves into an utter commonsense attitude if the honest selfinterest point of view is adopted. Therefore when Osborne [Thomas Mott Osborne: Health Conditions in Prisons, *American Journal of Nursing*, July, 1917] presents the prison problem as one of defense of the community against the most insidious and serious form of sickness, as a matter which can make most extensively for public health or disease, sentimentalists, the stupidly ignorant, and those stubbornly harsh and inhuman in their own unconscious selfdefense must enter into a new scientific attitude toward actual and unavoidable facts.

Facts which Osborne reports from his own personal contact with the prisons of our presumably enlightened States are sufficiently appalling to arouse more than a passing horror that they should be so. Yet they exist, while the spirit in which they have arisen and held their place through human history continues to dominate our courts, our prison management, the general attitude of society individually and collectively. The bland security of the individual and the social group is indeed maintained by setting the prisoner as a thing apart beyond the pale of ordinary consideration, ceasing to take account of him as still an integral part of the body social. The common humanity which is courageous enough to recognize the prisoner as a brother—the very reason unconsciously why this bitter defense against the common bond is so rigidly held—forbids the continuance of such a spirit among people who have at their command the means for a truer self-knowledge and social control. The practical application of such common humanity brings the question back again to that of wholesome selfinterest.

The prisoner, as Osborne says, is in prison because of a disease. He is a menace to the community just as is the victim of an infectious physical disease. The difference lies in the method of treatment in the two cases. Hospitals exist for the care and healing of physical disease. The hospital devotes itself to careful diagnosis in the first place, and cure of the patient and protection of the community by eradicating from him all danger of further infection before his entrance again into the world. The work of the prison is no less important, should be no less scientific, differentiated, and exact. Because the disease which finds harborage there reaches further and deeper in its insidious moral and social aspect, it demands in greater measure all the factors of prophylactic and therapeutic efficiency with which modern advance has equipped the service of physical disease. Instead of this the obstinate disregard of the prisoner's wellbeing, or of community wellbeing through him, permits a condition even of neglect of physical disease which allows it to disseminate itself among the prisoners and then through the discharged out into society. The moral disease which has made necessary prison sojourn is, however, still more neglected and left

out of account. Solitary confinement, senseless infliction of the same rules of treatment upon all alike, rules that violate all common decency and cleanliness, punishment and discipline that fairly crowd the men down into "mental, physical, and moral degeneration"—these are the methods whereby physical, mental, and moral disease are never by any means subjected to cure, but fostered and kept festering until the term has expired and the man, sicker than when he entered, goes out to infect society with disease which has grown more virulent and noxious to himself and his fellowmen.

Over against this stand Osborne's methods of letting in "light and air," simple democratic measures of admitting the community into a knowledge of affairs not only, but, more important still, of cooperation with the men who are sick. Who knows the whole problem, says Osborne, better than they, and who is better fitted to work it out? These sick men are as desirous of ridding themselves of illness as any others, even though it is a question of moral sickness. Again moral sentiment comes down to the sound basis of selfinterest, and on this basis the democracy of prison reform has proved itself practicable. For after all, men in the prisons are of the same mould as the men in hospitals, asylums, or the active walks of life. Sickness is a handicap manifesting itself in separation from society, ineffectualness, lack of adjustment to social demands. True selfinterest seeks to get away from this back to social harmony. Health of body, health of mind, health of morals lies in this; success and manhood lie in them all. The men in the prisons have proved themselves ready to learn this as they have been given opportunity. Society's own health demands that such opportunity should be given them.

DRUG RESISTANCE IN SYPHILIS.

There is probably no disease in which the question of a cure is more important than syphilis. For many years mercury and the iodides have been employed as a rule with great success, yet the fact remains that many a patient shows little improvement, the treatment is distinctly unsuccessful, and both physician and client are disappointed. That a complete cure is not as common as was formerly imagined has been clearly demonstrated since more accurate methods of control have been elaborated.

Many, after having undergone a long regimen, still show a positive Wassermann reaction, particularly if the more delicately reacting antigens, such as the cholesternized, are used. With some it seems as though no amount of treatment has any effect. Before the comparatively recent investigations it was generally supposed that this lack of response was the result of an inherent condition of the patient's tissues. Ehrlich, however, in his studies of the sleeping sickness, a trypanosome disease, found that the causative agents varied in their resisting power to the action of various drugs. If small doses were given, the trypanosomes developed a well marked resistance so that larger amounts had to be given. A point was reached where the trypanocidal dose was toxic for the patient. On this account he developed his theory of *therapia sterilisans magna*, the principle of which was that by means of a single large dose, the infecting organisms would be destroyed before they had developed their resisting powers. Unfortunately in the use of salvarsan its application has not fulfilled the expectations. It has been shown repeatedly by clinical observations that in order to get the full benefit of the drug, successive doses must be employed.

Believing that the unfavorable results obtained were probably due to the treponema becoming accustomed to the medication, Akatsu and Noguchi report in a recent number of the *Journal of Experimental Medicine* the results of their experiments. There being no way to control the condition in animals, they used for their work pure cultures of the treponema and some allied nonpathogenic varieties of spirochetes. Their findings were most interesting and substantiated their belief. They employed salvarsan, neosalvarsan, bichloride of mercury, and an iodine iodide solution of potassium. Within three to four months it was found that the treponema had increased their tolerance to salvarsan and neosalvarsan to five and one half times the original. The results with the bichloride of mercury were even more marked; with this drug the increase in resistance was about thirty-five to seventy times, while with the iodine iodide solution the increase was only about three times.

One other important point was noted. It was found that this acquired resistance disappeared when the spirochetes were cultivated through several generations in drug free media. Although no such suggestion was made by the authors this might be a basis for the value of an intercepted treatment.

PHARMACISTS TO AID THE SURGEONS.

By a happy coincidence we received communications simultaneously from Dr. J. Madison Taylor, of Philadelphia, and from Dean Wulling, of the School of Pharmacy of the University of Minnesota, president of the American Pharmaceutical Association, urging the recognition of pharmacy in the army as a means of enlisting the cooperation of

the pharmacists of higher attainments. Both of these were published in our issue of July 21st. The organization of our army on a peace footing required no recognition of pharmacy as a separate calling. Our medical supplies were purchased, packed in convenient receptacles, and ready for dispensing, which could be done by almost any intelligent layman. The comparatively small pharmaceutical skill required under the organization of the army in times of peace was easily acquired by the more intelligent enlisted men of the Medical Department. Now that we are at war, however, and our army has been suddenly increased to ten times its former size with prospects of still further enlargement, it seems highly desirable that the physicians in the Medical Corps should be relieved of the details of the medical supply service, and that this should be turned over to skilled pharmacists of high professional training. This could only be done successfully by creating a pharmaceutical corps with commission rank.

This proposal met with the approval of the Section in Pharmacology of the American Medical Association at the meeting held in New York, and has also been approved by the journal of the Association. In view of the acknowledged difficulties in obtaining the services of the required number of medical officers, it would seem that the physicians in the Medical Corps would be exercising an enlightened selfishness if they too would lend their aid to the movement begun by the American Pharmaceutical Association for the establishment of a commissioned pharmaceutical corps in the Medical Department. Not only would the pharmacists of a higher type, who might thus be induced to join the service, be useful in the purchase, preparation, and distribution of medical supplies, but they would be of great help in making clinical examinations of sputum, urine, etc., in doing certain kinds of bacteriological work, in examining foodstuffs and water as to potability, and in doing other chemical work which is now either neglected or performed by medical men who can be ill spared for purely medical fields of labor.

Doctor Taylor quite properly urges that the army and navy surgeon be given the expert assistance which could be rendered by such a pharmaceutical corps. In the armies of every first class power, except Great Britain and Russia, the value of the pharmacist's service has long been recognized by commissioned rank. In the armies of Italy and France the chief pharmacist is a major general; in the German army, before the war, he bore the rank of colonel, though his rank has probably been raised since that time. In the Japanese army the chief pharmacist was a lieutenant colonel, and in the Spanish army a colonel. Even in the British army there are a few pharmacists who have commissioned ranks, though there is no organized corps of commissioned pharmacists. It is to be noted that all those nations which maintain large standing armies have recognized the value of the services of the expert pharmacist by conferring commissions upon them. Surely the soldiers of the United States are entitled to have the services of men of the highest degree of skill in every line.

MECHANICAL FACTORS IN THE PATHOLOGY OF VISCERAL SCLEROTIC PROCESSES.

It is more particularly by the clinical and pathological study of the various viscera that the preponderating influence of inflammation as a mechanical factor in the production of visceral sclerosis is made clearly evident. Thus the part played by asystolic disturbances is very considerable, and lesions in nearly all organs, from simple congestion to sclerosis resulting from this, have been described. Prolonged stasis in cardiac patients is generally admitted to be one of the essential mechanical contributory causes in the production of hepatic, renal, and pulmonary sclerosis.

Unquestionably, the disturbances arising from asystolia are a predisposing factor in the causation of visceral scleroses, but further mechanical causes arise from infection or intoxication. As Bard long ago pointed out, an attentive study would seem to show that even in undoubted cases of primary cardiopathies, such for example as those resulting from rheumatic endocarditis, the marked scleroses met with in various organs are not alone the result of purely physical disturbances but are also related to local inflammatory processes derived from the same pathogenic factor as the cardiac lesion, and represent a more or less autonomous localization.

These are the cases in which the inflammatory process has multiple localizations, representing the so called polyvisceral interstitial inflammation described by Bard and the multiple disseminated scleroses of Grasset. The inflammatory process may attack a single viscus, giving rise, for example, to interstitial myocarditis, interstitial plastic pneumonia, etc. The inflammatory processes, a very general phenomenon, which occur at the same time both in the skin and viscera, arise and undergo a simultaneous evolution in many instances. The coexistence of inflammatory attacks not only in the connective tissue of the viscera and in the dermis, but also in peritoneal and pleural serosa, giving

rise to ascites and pleurisy with effusion, has been frequently recorded. The pleural fluid collection occurring in cases of interstitial nephritis, aortitis or polyvisceral sclerosis was formerly compared to simple hydrarthrosis and in the mind of the older pathologists this represented stasis with serous transudation of an entirely passive nature.

But the results obtained by Letulle and other observers from comparative chemical analyses of the fluid in pleurisy and in the pretended hydrothorax, show that in reality there exist all the intermediate lesions, from the viewpoint of chemical composition, between the transudates and exudates, the only difference being a greater content of fibrin and solid matter in the pleuritic exudate. It was thus made evident that a pleural hydropsy was, in reality, a subacute serous pleurisy and as in the case of ascites, blood stasis is not a sufficient cause and that a concomitant inflammatory process in the serosa must exist. It is precisely these subacute pleurisies that are frequently accompanied by inflammatory edema and the existence of this latter process is unquestionably closely related to the inflammatory process seated in the pleural serosa.

The practical deduction to be made is that in order to prevent the production of visceral scleroses one should not only combat the mechanical disturbances of the circulation with digitalis, etc., but at the same time an efficacious prophylactic treatment must be brought into play against the various factors of infection or intoxication. The inflammatory attacks should be dealt with by strict attention to cleanliness, where the skin is concerned, while a revulsive and resolutive medication, combined with rest in bed, is the essential element of treatment when the viscera are involved.

DIGESTION.

To those who studied their physiology ten years ago, instead of then and every year since, the processes of digestion seem comparatively simple and independent of what is taking place elsewhere in the body, and comparatively unrelated to what takes place in the different sections of the food tube. Proteins, carbohydrates, and fats, in those school days, underwent certain mechanical manipulations and chemical changes in the stomach, and in the intestine the materials not yet ready for absorption were churned about, other chemical reactions took place, and digestion was completed. What took place was illustrated before our eyes with test tubes and juices from the glands of an animal. Many of us were troubled on clinical application of our knowledge of physiology to find that the human digestive apparatus did not work so simply or so disconnectedly.

Very important information of a practical nature has come to light in recent years with regard to the processes of digestion. The psychological and nervous conditions, if they can be separated, at the beginning of digestion have loomed up, affecting not only salivary digestion but gastric and indirectly intestinal digestion. The discovery of the formation of hormones in the stomach and duodenum exciting the stomach to complete action and the liver and pancreas to do their coordinate duty, have cleared up much of the mystery of the dissimilarity between laboratory and actual digestion, and have made experiments in glass seem simple by comparison with the real processes.

All this later information indicates that the organs of digestion, while more or less supplementing each other, work together as a whole, the functioning of each organ in succession serving to prepare and proportion the activity of the succeeding organ. The importance of the first stage of digestion, the only one over which we have any conscious control, is thus magnified to supreme importance. Food taken in a reasonably happy emotional atmosphere, and thoroughly masticated and tasted—in a word, food that is needed and consciously made the most of can be expected to be well taken care of in all the succeeding sections of the alimentary canal. It goes without saying that the food shall be selected to fit the needs of the individual, but hunger present under these circumstances means that the digestive organs are most ready and willing to work, and if a sensible selection of material has been made and the activities of digestion under control of consciousness have been sufficiently utilized, one is not likely to overeat and abuse his powers of digestion. When digestion is upset the methods of feeding are almost certainly at fault and not any one organ.

A SHINING MARK.

No one who is at all conversant with the reports from the western front in the war doubts the dangers confronting the Medical Corps. The term "noncombatant," in this connection, has ceased to have any meaning. Our English cousins have sent their bravest and best physicians to the front and seen them mowed down by hundreds. In the teeming hell of No Man's Land nothing is sacred, not even the mission of the healer of men. Small wonder then that the military surgeon occasionally forgets that his duty is to build up, not destroy, and launches a blow himself against the enemies of civilization. An editorial writer in the *British Medical*

Journal reminds us that the English physician has often in the past shown himself a "first class fighting man." There is the old story of the army surgeon at Waterloo who charged into battle with the Scots Greys, holding on to the stirrup of a horseman. Twice in Guinea the Duke of Cambridge was rescued by physicians from situations of peril. Sir Anthony Howe at Lucknow and Lieutenant Colonel J. H. Reynolds at Rorke's Drift both won the Victoria Cross for valor in defense of the wounded under their care.

In these and many other instances the British profession have set for us a shining mark. The kindly heart, the ceaseless zeal have been theirs, and with them a little of the fire that never dies. "He rushes to the fray as if he were summoned to a banquet" might be said of one of them.

News Items

Women Doctors Wish Commissions.—At a meeting of women physicians held recently in San Francisco resolutions were adopted requesting that women be accepted for service in the Medical Corps of the army and be given the same rank as men.

Assistant Surgeons in the Navy.—Secretary of the Navy Daniels has recommended to the President for appointment as assistant surgeons in the U. S. Navy, 270 members of the Medical Reserve Corps who have passed their examinations and qualified for appointment.

Poisoned Plasters.—The assistant attorney general of the United States has issued a notice to the effect that samples of the alleged poisoned plasters which are said to have been used as a means for distributing tetanus germs are being examined by the Department of Justice. In the meantime the public is warned not to use plasters except such as are obtained from approved sources of supply.

Donations to Red Cross by Postal Employees.—Partial reports from postmasters throughout the country show that there has been contributed for Red Cross work by postal employees and through the instrumentality of postal employees the sum of $55,-994.31. The reports are by no means complete, but they give evidence of the enthusiastic cooperation of postal employees in Red Cross work.

Medical Department of Columbia Open to Women This Fall.—Through an unexpected gift of $50,000 from George W. Brackenridge, of San Antonio, Texas, Columbia University will be able to put into effect at once plans for the admission of women students into the medical department which had been held up for lack of funds. More than a year ago Columbia authorized the coeducational department in medicine and it was to become effective as soon as the building and equipment were ready. Plans were prepared for a five story addition to the present building with extra laboratory facilities in the departments of chemistry, bacteriology, pharmacology, and pathology, costing $85,000. Mr. Brackenridge's gift makes it possible to begin work at once, and it is expected that the university will matriculate its first women medical students in September.

Promotions in the Medical Corps of the Army and Navy.—The following nominations have been sent to the Senate by the President: War—First lieutenants, Medical Reserve Corps, to be first lieutenants, Medical Corps: Dr. Frank C. Griffis, Dr. Henry C. Bierbower, Dr. Edgar F. Haines, Dr. Frederick H. Mills, and Dr. Val E. Miltenberger. Navy—Medical inspectors to be medical directors: Dr. George T. Smith and Dr. George A. Lung; to be assistant surgeon, Assistant Surgeon Julius F. Neuberger, Medical Reserve Corps.

Madison Barracks to Become a War Hospital.—It is reported that the War Department will probably use Madison Barracks as a hospital after the present reserve camp, which is to end on August 5th.

A Woman's Bureau of the Red Cross.—The American Red Cross Society has established a bureau, composed of prominent women from all parts of the United States, to aid in developing war relief work by women. One of the first undertakings of the bureau will be to assume supervision of the making of surgical dressings. Miss Florence M. Marshall, director of the Manhattan Trade School, is director of the bureau.

Medical Care of Injured Federal Employees.—In accordance with the provisions contained in Section 9 of an act of Congress approved on September 7, 1916, civil employees of the United States who are injured while in the performance of their duties, shall be furnished, upon application and without personal charge, reasonable medical and surgical treatment by all medical officers at first, second, and third class relief stations of the service, in accordance with certain prescribed rules.

Association of Military Surgeons.—It is planned by the officers of the association to hold an annual convention this year on October 8th in Indianapolis. There was no meeting last year on account of the mobilization of troops in Texas and along the Mexican border, but it is desired to have one this year. At the coming convention there will be an election of officers and the transaction of other important business. The membership of the association is increasing rapidly, and the organization never before was in such a prosperous condition.

Medical Students Not Exempt from Draft.—Surgeon General Gorgas has issued a statement that medical students are not to be exempt from draft, but will be given conditional and limited furloughs to continue their medical studies. This furlough is intended to furnish an opportunity for the student to complete his studies and obtain his required year of hospital experience, so as to fit him for service in the medical department of the army. The Surgeon General, through the medical section of the Council of National Defense, is endeavoring to prevent the undue depletion of the civilian hospital staffs for service at the front.

Philadelphia Gives Another Medical Unit to the Navy.—St. Agnes' Hospital, at Broad and Mifflin Streets, Philadelphia, has been turned over to the government service. It will soon go into active work at League Island, changing its name to Naval Station Hospital No. 2. Dr. John A. McGlinn is director of the unit and will have the rank of lieutenant commander in the navy. His first assistant will be Dr. Francis J. Dever, who will also have the rank of lieutenant commander. Other members of the staff, who will have the rank of lieutenant, are: Dr. Benjamin D. Parrish, Dr. Eugene Casem, Dr. Gilbert M. N. Berger, and Dr. Joseph Hart Toland.

Mental Hygiene in the Army.—Dr. Pearce Bailey, of New York, chairman of the Committee on Furnishing Hospital Units for Nervous and Mental Disorders to the United States Government, a subcommittee of the National Committee for Mental Hygiene, has been invited by the Surgeon General of the United States Army to accept a commission as major and to come to Washington as personal adviser to the Surgeon General in all matters pertaining to psychiatry and neurology. Major Bailey is now on duty in the Surgeon General's office. Dr. Frankwood E. Williams, associate medical director of the National Committee for Mental Hygiene, has been appointed vice-chairman of the committee and placed in charge of the work in the New York office.

Medical Officers Ordered to Fort Oglethorpe.—The following named officers of the Medical Reserve Corps are assigned to active duty and will proceed to Fort Oglethorpe, Ga., and report in person to the commanding officer of that post for duty and by letter to the commanding general Southeastern Department: Captains Joseph W. Bauman, Vilray P. Blair, Andrew R. Bond, Eugene Davis, Ralph W. Holmes, Randell Hunt, William H. Leet, Thomas P. Lloyd, and John G. Martin; First Lieutenants Oliver W. Alford, James H. Arnett, John E. Boyd, Walter W. Harris, William E. Hart, Charles W. Hoffmann, Samuel G. Hollingsworth, Joel W. Hood, Elmer J. Lambert, John A. Lightfoot, Edward O. Little, Homer P. Prowitt, Thomas Ragan, Homer Reese, George H. Richards, and George W. Sherouse.

Elks to Establish Hospital Units in France.—More than 400,000 members of the Order of Elks have been notified of an order of the grand lodge calling for a fund of $1,000,000 to be used in establishing base hospital units back of the trenches in France.

According to the chairman of the war relief commission of the Elks, each base hospital unit will have a capacity of caring for 500 wounded and will cost about $60,000. They will be maintained by the government. Each unit will have 26 surgeons, 68 nurses, and 150 orderlies.

Neuilly Ambulance Now an American Army Hospital.—The American Ambulance at Neuilly, France, which was organized by the American colony in Paris, became an American army hospital on July 22d. The ceremony, which was a simple one, took place in a large ward which had been cleared for the purpose. It was filled with surgeons, physicians, nurses, members of the American colony, and officials of the French sanitary service. Among those present were Ambassador Sharp, M. Gogard, Under Secretary for War; Dr. Bouche, chief surgeon; Mrs. William K. Vanderbilt, Colonel A. E. Bradley, of the Medical Corps, U. S. A., and Mrs. Robert W. Bliss, wife of the secretary of the American Embassy.

Plans for Hospitals at Army Cantonments.—Plans for hospitals for all of the sixteen army cantonments have been completed by the office of the Surgeon General and the work will be commenced by the cantonment division of the Quartermaster's Department and rushed to completion before troops are called under the selective service law. All cantonments will have complete hospital facilities, so that any of the 40,000 troops to be stationed in each cantonment can receive at once the best medical care. The hospitals will have, with few variations, thirty-four wards, including two isolation wards. Separate barracks are to be provided for hospital internes and other employees, and special buildings for the administrative offices, power station, operating rooms, kitchen and dining room, chapel, and other hospital needs.

Psychiatrists and Neurologists Wanted to Examine Troops.—The Mental Hygiene War Work Committee of the National Committee for Mental Hygiene is anxious to obtain the names of psychiatrists and neurologists who are willing to give part time service in the examination of National Guard troops in their vicinity. The recent decision of the War Department to examine the National Guard troops in their armories before sending them to camp makes it necessary to secure at once a large number of examining physicians. To meet the situation the Surgeon General of the Army has arranged to accept for this work qualified physicians on contract. A physician may contract for specified duty, at a specified place, for a specified time, or for part time. This latter provision makes it possible for many physicians who cannot take out commissions, or who cannot give all of their time to the work for a period of months, to give part time each week. Further information can be received from Dr. Frankwood E. Williams, vice-chairman of the committee, 50 Union Square, New York.

War Department Orders for Officers in the Medical Reserve Corps.—Captain Charles W. Haverkampf, Medical Corps, is relieved from duty at the United States Military Academy, West Point, N. Y., and will proceed to Fort Oglethorpe, Ga., and report in person to the commanding officer of that post for duty as surgeon and also to take charge of the general hospital.

Captain W. Cole Davis, Medical Corps, is relieved from further duty at the United States Military Academy, West Point, N. Y., and will proceed to Wrightstown, N. Y., take station, and act as camp sanitary officer during the period of construction of cantonment

Major John T. Sprague and First Lieutenant Edward D. Ellis, Medical Reserve Corps, are assigned to active duty and will proceed to Fort Oglethorpe, Ga., and report in person to the commanding officer, medical officers' training camp, for a course of instruction.

Captain William T. Cade, Jr., Medical Corps, will proceed to Atlanta, Ga., and report for duty as camp sanitary officer during the period of construction of cantonments.

Personal.—Dr. Winthrop Talbot, of Flushing, N. Y., has been appointed adviser in alien industrial education to the New York State Bureau of Industries and Immigration. Doctor Talbot will cooperate with the chief investigator of the bureau and will consult employers with regard to English classes in industrial plants.

Dr. J. S. Shearer, professor of physics at Cornell University, has been granted leave of absence during 1917 and 1918 for war service. He is directing the standardization of x ray apparatus for the Medical Corps of the army and navy.

Dr. C. E. A. Winslow, professor of hygiene at Yale University, is engaged in Red Cross work in Russia.

Dr. Saxton Pope, of San Francisco, has been appointed chief surgeon of the Emergency Hospital service in that city, succeeding Dr. Alanson Weeks, who resigned to become chief surgeon of army base hospital No. 30 when that unit is called into service.

Professor Veranus A. Moore, director of the New York State Veterinary College at Cornell University, has been called to Washington, as a major in the veterinary corps of the Army. Professor Moore is an authority on diseases of animals.

Major Lewis Gregory Cole, Medical Reserve Corps, United States Army, now at Cornell University Medical College, has been assigned to active duty in New York as an instructor in röntgenology.

To Combat Venereal Disease in the Army.—To protect the American soldier from venereal disease, the Medical Department of the Army has organized a section which will devote its attention exclusively to this problem. Cooperating with the newly organized section will be the United States Public Health Service and the sanitary and training camp divisions of the Army Medical Department. Major F. F. Russell, Medical Corps, United States Army, will have charge of the laboratory investigations. Dr. William Allen Pusey, of Chicago, a major in the Medical Reserve Corps, will devote himself to the scientific side of the problem. Educational and sociological studies and investigations into environmental conditions will be carried on under the direction of Major William F. Snow, Medical Reserve Corps. Surgeon General Rupert Blue will represent the United States Public Health Service; Colonel F. P. Reynolds, Medical Corps, United States Army, will cooperate in the field of sanitary inspection; and Lieutenant Colonel Edward L. Munson, Medical Corps, United States Army, will work with the section of the training camp division.

Red Cross Commission to Rumania.—The third Red Cross commission to be sent to Europe since the organization of the war council to make first hand investigations in belligerent countries is to go to Rumania. It is headed by Henry Watkins Anderson, a lawyer of Richmond, Va., and will undertake at once, in addition to its investigation of sanitary and health conditions, actual relief work among the Rumanian refugees. To do this work a Red Cross medical unit of twelve doctors and twelve nurses accompanies the commission. Quantities of medical supplies, serums, vaccines, and foodstuffs urgently needed in Rumania are being sent with the commission by the war council. A special emergency appropriation of $200,000 has been voted for Rumanian relief.

In addition to Mr. Anderson, the chairman, the members of the commission are: Arthur Graham Glasgow, an engineer of Washington, D. C.; Dr. Francis W. Peabody, of Boston; Bernard Flexner, of Chicago, a lawyer. Dr. H. Gideon Wells, of Chicago, professor of pathology in the University of Chicago; Dr. Roger Griswold Perkins, of Cleveland, professor of hygiene, Western Reserve University, and Dr. Robert C. Bryan, of Richmond, Va.

Doctors of the medical unit accompanying the commission are: Dr. W. D. Kirkpatrick, Bellingham, Wash.; Dr. Richard Penn Smith, Fort Loudon, Pa.; Dr. D. J. McCarthy, Davenport, Ia.; Dr. George Y. Massenberg, Macon, Ga.; Dr. R. H. Rulison, Syracuse, N. Y.; Dr. B. C. Hamilton, Syracuse, N. Y.; Dr. Benjamin Earl LeMaster, Macomb, Ill.; Dr. Louis H. Limauro, Lynn, Mass.; Dr. E. F. Hird, Bound Brook, N. J.; Dr. W. T. Lowe, Pine Bluff, Ark.; Dr. Joseph H. Gruener, Chicago, Ill.; Dr. Feo Duro Guca, Chicago, Ill., and Dr. William J. Kucera, New Prague, Minn.

THE USE OF INEXPENSIVE DRUGS IN PRACTICE.

By Louis T. de M. Sajous, B. S., M. D.,
Philadelphia.

In foregoing issues the cost of ergot and of adrenal and pituitary preparations was compared and the indications of the first two of these agents as stimulants to the vascular system discussed. Adrenal products were shown to be superior to ergot in the treatment of certain special types of vascular disturbance, this superiority in clinical action rendering the substitution of ergot for these purposes inadvisable, in spite of its less cost, dose for dose. Pituitary preparations, as we have seen, are at present about ten times as expensive, at least in the liquid forms now customarily used, as the suprarenal active principle, and in comparison with ergot, the difference is even greater. The question is thus suggested: To what extent are the special properties of the pituitary products of such distinct and exclusive value as to necessitate substitution of these products for epinephrin and ergot in the treatment of vascular hypotonicity, with or without low general blood pressure?

Considering, in the first place, the actual power and certainty of action of pituitary preparations as vascular remedies, we may note that, for practical purposes, these preparations occupy a place between epinephrin and ergot. They are believed by many to contain, like the latter drug, more than one active principle—a view entailing the possibility that owing to variation in the proportions of these principles in different specimens, the specimens may exhibit quantitative and even qualitative differences in their effects. In the vasoconstrictor action of the liquid posterior pituitary preparations, there seems to be distinctly less of uncertainty than obtains in the case of ergot. In respect of the cardiac action, experimental work appears to have shown that pituitary solution may at times exert a depressant effect on the heart. Clinically, however, this action has not proved troublesome, except, perhaps, in a few instances of intravenous injection, in which transitory symptoms suggestive of cardiac depression have been observed. Possibly such symptoms, if actually due to heart depression, could have been avoided by a slower injection of the drug. According to some clinical observers, pituitary preparations actually strengthen heart action.

Pituitary solution resembles ergot in being capable, as pointed out in 1912 by Noel Paton and A. Watson, of evoking the "vasomotor reversal" phenomenon, i. e., of causing the bloodvessels to respond to an intravenous injection of epinephrin by dilatation instead of contraction. This applies particularly to large doses. Another point of resemblance is the stimulating action of the two drugs on certain involuntary muscle tissues, such as those of the uterus and intestines and, in some degree, the bronchioles, though Hoskins has encountered some specimens of pituitary solution which seemed to inhibit the contractions of excised intestinal tissue. Epinephrin, as already pointed out, typically inhibits the intestinal and bronchiolar muscle layers. As regards special actions on certain restricted portions of the circulation, we note that whereas epinephrin is held to exert in man but little effect on the pulmonary, cerebral, and coronary vessels—or an effect varying according to the dose used—pituitary products seem to cause a definite vasoconstriction in these areas. Clinically, on the basis of the action on the pulmonary vessels, good results from pituitary medication have been claimed by several observers in acute hyperemic conditions of the lungs and in hemoptysis. In the case of ergot there appears also to be a tendency—much less definite, however—to vasoconstriction in the special areas referred to. Comparing the three agents further in regard to their efficacy by various routes of administration, we find that ergot is believed to act on the circulation even when taken by mouth; that adrenal products until recently were by nearly all writers held inactive by this route, though evanescently active when used intramuscularly or intravenously, and that pituitary preparations are still considered but slightly active unless injected into a muscle or vein.

The chief objections, hitherto, to the use of epinephrin as a general vasoconstrictor agent have been the suddenness and brevity of its action. Josué, in recent military as well as civil practice, has observed that these drawbacks can be eliminated by the subcutaneous administration of epinephrin in normal saline solution. An ampoule containing 0.001 gram of epinephrin and 0.01 gram of novocaine in solution is emptied into 250 or 500 c. c. of saline solution just before injection of the latter. With this method absorption is slow and the effects can be satisfactorily kept up by repeated injections for several days, if necessary.

In connection with this the fact that, under epinephrin, "the arterial muscle remains stimulated, in the susceptible vessels, as long as effective concentrations of epinephrin are present" (Sollmann) may prove of significance. While the action of posterior pituitary solution on the circulation normally lasts longer than that of epinephrin, its power is known gradually to wane upon repeated injection of large doses. Epinephrin, moreover, acts in a more certain manner on the blood pressure than pituitary solution, and there is never any doubt as to its stimulant action on the myocardium itself. According to Josué and others, epinephrin will produce a distinct effect on the circulation even if given by mouth, provided fairly large doses are used.

On the whole, it would seem that if methods of administration such as will slow down and prolong the action of epinephrin can be clinically employed, there is no reason why, in a large proportion of cases, this agent should not supplant as a vascular

stimulant the far more expensive pituitary preparations. According to Watanabe and Crawford, 1916, indeed, epinephrin or a closely allied substance is one of the active principles actually comprised in pituitary preparations. Under certain circumstances, to be sure, pituitary solution presents accessory advantages which epinephrin does not possess. Thus, in the treatment of circulatory depression in acute infectious diseases, the former tends, as S. Solis-Cohen, 1916, and others have emphasized, to prevent tympanites and dilatation of the stomach. In other cases, the action of pituitary solution, administered hypodermically, in reducing the coagulation time of the blood may prove an advantage—though Cannon and Mendenhall, 1914, showed that small doses of epinephrin, given intravenously, likewise accelerate coagulation. As for ergot, while similar to pituitary preparations in many of its effects, it must be held inferior to the latter in certainty of action on the circulation, and in many instances cannot, therefore, be substituted without prejudice for the more expensive drug.

(*To be continued.*)

Treatment of Toxemias of Pregnancy.—George H. Lee (*Texas State Journal of Medicine*, May, 1917) divides toxemias of pregnancy into several types, for which there are different methods of treatment. Pernicious vomiting of pregnancy may be of the reflex, neurotic, or toxic type. The reflex type should be treated by treating the cause; the neurotic type, by isolation, forced feeding, stomach lavage, etc. If isolation, stimulation of the skin and kidneys, etc., do not cause an improvement, but rather an accentuation of the symptoms, the uterus should be emptied. In cases of nephritic toxemia, the uterus, should be promptly emptied, unless the symptoms are very mild, the child alive, and the pregnancy near the twenty-eighth to thirty-second week. In cases of hepatotoxemia 0.25 grain of morphine should be given for pain, unless the blood pressure is low or there are signs of heart failure. Chloral and bromides should be administered to promote rest. Elimination should be promoted by every possible channel—through the bowels by salts or calomel; through the skin by hot packs, hot drinks, hot air baths; through the kidneys by diuretics, abundance of fluids, Fischer's solution. The diet should consist of milk, skimmed sweet milk, or buttermilk. The urea output and albumen loss should be estimated daily and the blood pressure should be watched. If urea decreases, albumin increases, or blood pressure is above 180 the outlook is bad, and the patient should be delivered. If the fetal heart beat reaches 160 or drops below 100 quick delivery is indicated to save the child. Eclampsia is a rather serious phase of toxemia and demands different treatment. To control the convulsion, 0.25 grain of morphine should be given, and if the blood pressure is high, 0.125 grain pilocarpine. Bromide may be given in dram doses with half a dram of chloral by enema. If an anesthetic is given, ether is to be preferred. Ten minims of veratrum viride by hypodermic every hour until the pulse falls below 80 is recommended After the convulsions have been controlled it is good to deliver at once. In a multipara or a primipara before term the cervix if dilatable should be dilated manually; with a rigid cervix vaginal hysterotomy or delivery by forceps or version, as most applicable, should be done under ether anesthesia. If there is a moderate contraction of the pelvis or a slight disproportion between the fetus and the pelvis or other complication producing dystocia, the Sanger operation is to be preferred. Following delivery elimination is to be actively pushed by the use of croton oil and calomel, followed by salines, by hot air baths, hot packs, hot drinks, or by fluids, as hypodermoclyses or intravenous introduction of Fischer's fluid after reduction of blood pressure or phlebotomy. When consciousness returns diureties are to be administered. The diet should consist of milk which is to be given freely.

Treatment of the Solitary Furuncle.—Willard Bartlett (*Journal of A. M. A.*, June 23, 1917) protects the lesion when it first appears with a bunion plaster or vaccination shield. It is not pricked, squeezed, or otherwise manipulated. It should then be exposed to sunlight or to the rays from an ordinary incandescent electric light as much as possible. Aspirine should be given in amounts up to five or ten grams. If this treatment does not abort the furuncle, time should be allowed for frank pustulation. Then the area about the furuncle should be infiltrated with one half per cent. novocaine containing four drops of 1:1,000 epinephrin solution to each thirty mils. The lesion should then be opened crucially with a thin electrocautery blade and the necrotic centre lifted out. If this does not separate at once, suction with a Bier's cup should be applied gently every hour or so. No dressing other than the shield or bunion plaster should be applied and exposure to light should be continued. Most of the treatment can be carried out in his own home by the patient with the aid of a member of his family if the furuncle is not accessible to him.

Primary Removal of Bone Fragments in Wounds.—Heitz-Boyer (*Presse médicale*, May 31, 1917) understands by primary removal one effected in a first line hospital within twelve to twenty-four hours after the injury. His observation has been that where bone fragments are freely removed at this early period the ratio of subsequent pseudoarthroses is very high. Where the original length of the limb was maintained by extension or a parallel bone, consolidation did not begin until the limb, after several months, was finally allowed to shorten and the bone extremities to come in contact. The periosteum, which according to Ollier normally loses in the adult its osteogenetic property, unless there is local morbid irritation, begins to thicken and react only after the twelfth hour subsequent to an injury. On the whole, with the present organization of hospitals behind the fighting front, Heitz-Boyer believes primary free removal of bone fragments a mistake in the great majority of cases. When able to operate in the first few hours, one should remove only enough bone fragments to insure drainage of the marrow cavity. Free removal of fragments remains good practice in the hospitals farther back, after twenty-four or forty-eight hours.

Spina Bifida.—E. D. Fenner (*New Orleans Medical and Surgical Journal,* July, 1917) advocates excision of the sac. An elliptical incision is made through the skin around the base of the tumor and the membranes are left intact as long as possible, are freed from the skin by blunt dissection, but must be opened at some stages. In most cases the strands of the cauda equina are found spread out over the interior of the sac and adherent to it. These are freed and replaced in the canal, and the membranes are closed by purse string or continuous suture of chromic catgut or fine silk so as to shut off the spinal canal. He believes that in the majority of cases the tender age of the patients contraindicates any complication of the operation by osteoplastic or other flaps. Suture of the dura and good closure of the skin is sufficient, but in favorable cases he thinks it advisable to attempt to suture the lumbar muscles over the gap in the bone.

Intraspinal Medication in Syphilitic Disease of the Nervous System.—Lewis M. Gaines (*Medical Record,* June 16, 1917), reviewing the history and describing the technic with its attendant dangers, is convinced that the early case of whatever type is most benefited. Those showing meningitic involvement with high cell count and globulin content have a better prognosis. The three principal methods of intraspinal therapy are the Swift-Ellis, the Ogilvie, and the use of mercurialized serum, with the consensus in favor of the Ogilvie method. Provided that the measure is used early, energetically, and frequently, the four reactions may be rendered permanently negative. In many cases the Wassermann remains positive, though the cell count and globulin content are reduced to normal; even in the presence of such positive reaction there may be clinical improvement or apparent cure. As to frequency of treatment, intraspinal injections are advocated every one to two weeks and the intravenous once every three to seven days; a case should not be called Wassermann fast until from ten to twenty injections have been given.

Therapy of Pellagra.—George W. Niles (*Medical Record,* June 2, 1917) bases his treatment on the observation of 1,150 cases, and he divides it into dietetic, hygienic, medicinal, and climatic. In the diet we may give egg albumen, sweet milk when it agrees, buttermilk, and when there is constipation oatmeal, vegetable puree, baked potatoes, and cereals with little sugar. Later when there is diarrhea, barley gruel, rice water, lighter cereals, thick broths, malted milk and egg, dry meat powders, dry albuminized powders, and butter are given. Peas and beans in the form of soup are valuable. As a constitutional treatment Niles gives on alternate days an ampoule of sixteen minims of iron arsenite solution and one containing 0.75 grain of sodium cacodylate by hypodermic, and by mouth a combination of Fowler's solution and a saturated solution of iodide of potassium up to the physiological limit. Careful treatment of symptoms should be carried out of correcting sleeplessness and constipation, allaying erythema, etc. Pellagrins do better when removed to a cool climate and if possible should avoid hot weather for ten or twelve months after the disappearance of all symptoms.

Dangers of Concentrated Neoarsenobenzol Injections.—G. Milian (*Paris médical,* May 19, 1917) asserts that the intravenous injection of neoarsenobenzol with a syringe is, in the first place, difficult because the large ten or twenty c. c. syringe used is hard to handle, meeting with obstructions against skin folds at the elbow, and in addition, dangerous because the physician, while pushing home the piston, is apt to push the needle through the vein wall, thus injecting the arsenical product into the cellular tissues—a mistake which may not be noticed until five or six c. c., or the third, half, or even the whole of the injection, has been forced out. The concentrated solution awakens in the cellular tissues a violent, pseudophlegmonous reaction, which results in extensive sloughing where the skin happens to be thin. In a recent instance in which this error in technic was made by a physician, the resulting slough was so marked as to lead to exposure of the veins at the bend of the elbow, which appeared as black cords over the yellowish and necrotic perimuscular fascia. Such lesions are painful and take three or four months to heal, without mention of the cicatricial retraction that may follow. With the dilute solutions of arsenobenzol, in which the arsenical injection is preceded by the introduction of saline solution, such serious results cannot occur, for if the needle leaves the vein the injection will be noticeably slowed down and even if a little solution enters the cellular tissues, its dilute form obviates excessive local irritation.

Surgical Treament of Hernia in Children.—A. J. Ochsner (*Saint Paul Medical Journal,* May, 1917) states that over ninety per cent. of all hernias encountered by him in children less than twelve years of age healed spontaneously or under a non-surgical treatment. The latter consisted in the prescription of a diet calculated to prevent abnormal intraabdominal pressure, overcoming all other causes of excessive pressure, such as constipation, phimosis, crying, and cough, and in keeping the child in bed with the foot of the bed elevated for at least fourteen hours each day. There are, however, certain definite and easily recognized classes of hernia in children which should be operated in, for sooner or later in these cases an operation will become necessary, at a time when its danger and inconvenience to the patient will be greater. All persons suffering from hernia in adult life who have had hernia during childhood are probably included in these classes, which comprise, 1, reducible strangulated hernia; 2, hernia complicated with hydrocele of the cord located in the inguinal canal; 3, hernia with omentum or intestine adherent to the sac; 4, hernia with congenital weakness of the tissues which normally should close the inguinal canal; 5, hernia with a tendency to strangulation but without a tendency to spontaneous healing; 6, hernia with cryptorchism without tendency to spontaneous cure. All these cases, constituting only about five per cent. of all hernias, require careful removal of the hernial sac and closure of the external wound. Classes 1, 3, and 5, are especially suited for the Anderson method. In Class 2, the hydrocele should be opened and everted. In Class 4 the Ferguson-Andrews-Bloodgood operation is indicated, and in Class 6 the Ferguson-Andrews-Bevan procedure.

Treatment of Acute Gonorrhea in the Poor.—W. Ray Jones (*Medical Record*, June 2, 1917) outlines a simplified treatment for men who have limited means. The patient is instructed to wash out the urethra with warm water in a syringe before each injection and several times daily in the intervals and then to use a solution of protargol beginning with 0.3 per cent. and increasing up to one per cent. Internally plenty of water and large doses of sodium bicarbonate will accomplish all that expensive drugs such as santal oil will. Later when the discharge becomes scanty zinc sulphate, one per cent. solution, will toughen the mucous membrane and may be given morning and night for a time while the protargol is used during the day and then used alone for several weeks. A suspensory should be worn to prevent epididymitis, the diet should be bland, testicular swelling should be treated by hot applications, and posterior infections can usually be cleared up by the drinking of large quantities of water to irrigate the urethra.

Treatment of Acute Aniline Poisoning.—J. Chalmers Lyons (*Pennsylvania Medical Journal*, April, 1917) in outlining the prophylactic treatment, points out that a physical examination of every employee should be made and that employees should wear clogs, respirators, and rubber gloves. Mild cases present symptoms of headache, vertigo, and nausea with more or less cyanosis. When these symptoms present themselves the patient should be sponged with acetic acid, which is followed by a general bath. He is then given a mild cathartic and put to rest in the fresh air. The employee usually returns to work in twenty-four hours but is not exposed to aniline for several days. The symptoms of a severe case are the same as those of a mild case, but they are exaggerated. There may be drowsiness with a slow and feeble pulse. Unconsciousness may develop. If symptoms of collapse present, active stimulation is instituted, preference being given to camphorated oil by hypodermic, and oxygen is administered.

Fifteen Cases of Complete Laryngectomy.—R. J. Moure (*Bulletin de l'Académie de médicine*, May 8, 1917) points out that, while formerly considered an exceedingly dangerous operation, complete extirpation of the larynx has of late been rendered, through improved technic, more and more safe. He is now able to report fifteen cases, operated in within the last year and a half, all of which recovered. Apparently local anesthesia is one of the chief factors of success in this operation, though in two of the author's cases general anesthesia was used. Another important measure is the institution of tracheotomy two weeks before the laryngectomy, thus accustoming the air passages to the entrance of air through a cannula. Where the larynx remains quite patulous and the tumor in it has not yet grown beyond the laryngeal cavity, the extirpation may be performed from above downward, separation of the larynx from the intact esophageal opening being easy. Where, however, the epiglottis and its lateral folds have become involved in the tumor, extirpation from below upward seems preferable, permitting likewise of free resection of the diseased upper portion of the esophagus and performance of appropriate plastic work. Procedures intended to insure breathing and prevent entrance of blood into the air passages serve only to prolong the operation uselessly. All that is required is the introduction of a large cannula and the superimposing of a thick tampon of gauze to prevent passage of blood between the cannula and the tracheal wall. It is important to even off the wound in the soft tissues in such a manner as to obviate postoperative sloughing. The wound having been properly cleansed, Moure places, in addition to a tampon of iodoform gauze above the cannula, another tampon in the region of the esophageal entrance, and sutures layer by layer the esophagus, prelaryngeal tissues, and skin. A permanent esophageal tube and a Lombard cannula greatly facilitate the dressings on the first few days after the operation. The postoperative care is a very important factor; beginning on the second day, two and even three dressings a day should be made. The operation should be performed early if a good immediate result and the minimal chances of recurrence are to be secured. The ultimate results of the operation are best in encapsulated malignant tumors in the thyroid cartilage.

Abortive Treatment of Erysipelas.—Capitan (*Bulletin de l'Académie de médicine*, May 22, 1917) finds that in mild and intermediate forms of erysipelas satisfactory results are obtainable by the use of hot antiseptic lotions and sprays and the application over the diseased area of a thick layer of the following ointment:

R Adipis lanæ hydrosi, Petrolati, } ....ana..50 grams;
Phenylis salicylatis, Antipyrinæ, } .....ana..5 grams.—M.

The treatment also includes frequent purgation; one gram of quinine daily; various diuretics, such as sparteine, 0.1 gram a day, generally with two grams of soft extract of cinchona and twenty grams of alcohol; camphorated oil injections—one in ten—and theobromine, one gram, according to indications. In the severe cases, with spreading erysipelas and destructive ulcerations or involvement of the myocardium, kidneys, or lungs, the duration of the disease seemed shortened by five c. c. intravenous injections of collargol once or twice a day, repeated for three to five successive days at a time. The best results, however, were obtained by subcutaneous injections in the flank of fifty c. c. of antistreptococcic serum, either once or twice a day. Usually the temperature descended, under this treatment, from 40° C. to normal in three or four days; the general condition strikingly improved, the eruption became paler with the tissues less edematous, and the skin quickly returned to normal. Even a complete involvement of the scalp was checked in two days. The treatment was as a rule continued two to four days; in one instance, five days. No untoward effects from the treatment were observed except, rather frequently, a serum rash on the fifth or sixth day, sometimes with joint pains. The latter yielded to salicylates and local use of chloral and bromide solution. In patients who had previously had horse serum injections a desensitizing dose of two c. c. of the antistreptococcic serum was given four hours before the first therapeutic injection.

Radiotherapy in Gynecology.—F. E. Keene (*Pennsylvania Medical Journal,* April, 1917) concludes that the large percentage of cures in even fairly advanced cases of carcinoma of the fundus indicates operation as the treatment of choice. In early cervical cancer radical operation is advised. In the more advanced cases, the application of radium is the preferred method. The application of radium in the vaginal cuff immediately after radical operation may be followed by disastrous results. For hemorrhage and foul discharge in inoperable cases radium is best. In benign hemorrhage due to myomata, radium should be employed. In young women radium should be used with caution as it may bring on a premature menopause. In no case of uterine bleeding should radium be used without a preliminary curettage.

Prophylaxis of Heat Stroke.—Amar (*Presse médicale,* May 21, 1917) ascribes the form of heat stroke experienced most frequently by soldiers and workers in the fields to an intoxication by fatigue products, acting in conjunction with the heat of the sun. In subjects who are not performing an excess of muscular work, heat alone is incapable of causing death. Prophylaxis on this basis consists in insuring sufficient lung ventilation, oxygen destroying the toxic material and thus preventing heat stroke. For this purpose, the thorax and shoulders should be rendered as free as possible, light clothing of ample size being worn, without collar or tie. No burdens at the level of the kidneys should be permitted. At regular rest intervals, forced respirations should be practised, with the head thrown back and mouth open. The subject should carry with him a mixture of water and vinegar, which he should on occasion use to moisten the face and snuff up into the nose in order to stimulate the respiratory reflexes.

Conservative Treatment of Puerperal Sepsis.—E. E. Montgomery (*Pennsylvania Medical Journal,* April, 1917) warns against operation as a routine in these cases. Very frequently it does more harm than good. The patient should be put at rest, elimination promoted, and immunity established. Locally, cold should be applied to the abdomen in the acute stages and hot applications after the temperature has become normal to promote absorption of exudation. Immunity is promoted by the use of vaccines and serums. The vaccines are to be preferred and they may be either autogenous or stock. The employment of autogenous vaccines has the following disadvantages: 1. Special skill is required in their manufacture; 2. examination of the blood of the patient often proves negative; 3. in severe cases considerable time is lost in preparation. The initial dose of an autogenous vaccine should be from ten to twenty million and should be repeated the following day if no reaction takes place. Serum should be employed in large doses of ten to twenty c.c. and should be given twice daily in severe cases. Collections of blood within or external to the peritoneum should be evacuated, and if suppuration of the peritoneum has taken place, incisions for drainage either in the vagina or in the sides of the pelvic wall should be made. Localized collections in the tubes, ovaries, and uterus should be removed only when they endanger life.

The Blood in Cancer under Röntgenotherapy.—Rollin H. Stevens (*American Journal of Röntgenology,* May, 1917) summarizes his observations carried out on a great number of cases, as follows: 1. Röntgen rays applied in repeated large doses, with deep penetration, profoundly affect the erythrocytes, which is contrary to the experiments reported in small animals. 2. For the first few days the lymphocytes are suppressed or destroyed by large doses of Röntgen rays; in favorable cases, this is followed by a lymphocytosis between the third and seventh days, which may continue until the fourteenth day, or it may stop after the seventh day and reappear on or about the fourteenth day. 3. There is a strong resemblance between the curves of these lymphocytic reactions and those which constitute the opsonic index. The treatment should probably not be repeated until the reaction is over. 4. The repetition of the dose should probably be governed by the reactions in the blood as well as in the skin, the former being much more sensitive than the latter. 5. In some cases of cancer, the Röntgen rays tend to stimulate a general immunity, if lymphocytosis is an indication of immunity. In cancer the Röntgen rays have a twofold action: to destroy disease cells and to stimulate resistance by producing a lymphocytosis.

Disinfection of Drinking Water.—H. D. Dakin and E. K. Dunham (*British Medical Journal,* May 26, 1917) found that chloramine-T was not very efficient for the disinfection of contaminated drinking water, requiring a considerable proportion of the drug and rendering the water decidedly unpalatable. The acidulation of the water with any acid, such as citric, tartaric, etc., greatly enhances the disinfectant powers of the chloramine-T and the water was not unpleasant to the taste. This combination was not suited for military use since the drug could not be made up into tablets with the acid without undergoing decomposition. Further experiments along this line led to the elaboration of a substance, p-sulphondichloraminobenzoic acid, which was called "halazone" as a convenient name indicating something of its nature. This chemical could be readily prepared from cheap and abundantly available materials, was stable, could be made into tablets, was powerfully disinfectant to water, and did not affect its palatability. The method of its preparation is described by the authors. A concentration of one in 300,000 would sterilize ordinary heavily contaminated water in half an hour. It was found most satisfactory to mix the drug with some salt, sodium carbonate having been found to give the best results. Tablets were made of the following composition: four per cent. each of halazone and sodium carbonate and ninety-two per cent. of pure sodium chloride. The drug should be ground with the dry salt and the carbonate then added. Tablets could be made of this combination without the use of any lubricant or other addition. The tablets should then be tested for their strength. Each such tablet should weigh about 100 mgm. and should be stored in amber glass bottles. Each tablet will sterilize one litre of water. Such tablets could be made at a cost of about two cents for the sterilization of about 100 gallons of water.

Miscellany from Home and Foreign Journals

Amebic Dysentery with Adrenal Insufficiency.—R. Dujarric de la Rivière and Villerval (*Paris médical,* April 21, 1917) consider adrenal insufficiency a rather frequent complication of amebic dysentery, manifested in marked general depression, asthenia, a feeble pulse, etc. In the case of a soldier on the Franco-Belgian front, stationed where Senegalese and Moroccan troops had recently been, the onset of diarrhea was accompanied by prostration and tachycardia. Careful examination revealed no organic disturbance save in the liver, which was slightly tender and distinctly enlarged. The number of stools rose as high as forty-five in twenty-four hours. The white line phenomenon was elicited on the abdomen and the pulse remained thready at 120 a minute. The diastolic blood pressure descended to seventy mm. Hg (Pachon instrument). Emetine hydrochloride in divided doses, to the total amount of 0.06 up to 0.1 gram per diem, together with adrenaline and camphorated oil, within a few days placed the patient on the road to recovery. The use of adrenaline is especially recommended where there are signs, even slight, of impairment of the adrenals due to toxic action of the amebæ on these organs.

Gastric Disturbance in Gallbladder Disease.—William Fitch Cheney (*Archives of Diagnosis,* April, 1917), studying sixty-two cases of gallbladder disease with regard to the frequency and character of accompanying gastric disturbances, found it possible to divide them into three groups. The first of these, comprising thirty cases, includes patients free of all gastric complaint between the typical acute gallbladder attacks. In fifteen of this group who were subjected to operation, the stomach was uniformly found normal; yet among thirteen gastric analyses, five cases showed total hyperacidity, six, subacidity, and only two, normal total acidity. In the second group—twenty-eight cases—there was a mixed picture of gallbladder attacks with more or less constant stomach trouble in the intervals. No definite gastric history diagnostic of gallbladder disease could, however, be formulated, some complaining of anorexia, distress soon after eating, fullness and distention, belching, constant nausea, and frequent vomiting; others chiefly of "sour stomach," and still others of a consciousness of their stomachs at all times, no matter what food was taken. The danger in this group is that the gastric history may so impress the patient as to remove or suppress the remembrance of attacks of biliary colic experienced, as a rule, at long intervals. In seven patients of this group treated by operation all were relieved thereby of their gastric symptoms. Of twenty-one treated medically, many were improved but none cured. Of gastric analyses in twenty-seven, fifteen showed hyperacidity and seven a decided subacidity. The third most puzzling group comprised four cases of persistent stomach trouble, due actually to gallbladder disease, but without any history suggesting gallbladder disease as the causal factor. Thus, in a man aged fifty-three years with anorexia, oppression after eating, belching, loss of weight, complete achylia, much mucus, but without any pain or physical sign, an exploratory operation performed for possible malignancy after failure of medical treatment revealed a large single gallstone, removal of which was followed by disappearance of all symptoms. In the second case, cardiospasm revealed by the x rays, with hyperacidity, disappeared permanently upon removal of two large mulberry gallstones; in the third, with "sour stomach," a small, obstructing ulceration was found at the pylorus and a large stone in the gallbladder. The x rays seem to offer most hope in the diagnosis of such cases, either by elimination of ulcer or cancer, or by demonstrating gallstones or pyloric distortions due to gallbladder adhesions. In indefinite cases that one is tempted to label "gastric neurosis," the possibility of gallbladder disease should be borne in mind.

Determination of the Intracranial Pressure.—L. H. Landon (*Journal A. M. A.,* May 26, 1917) emphasizes the fact that we still know little or nothing of the absolute intracranial pressure, although such knowledge should prove of considerable diagnostic value. The pressure has been estimated in a rough manner by many observers, but none has determined it with any degree of accuracy. The author has devised a simple U tube mercurial manometer reading to seventy mm. Hg and fitted with a short length of small bore rubber tubing to which is attached a metal connecting piece ground to fit the standard slip joint needle. A needle for similar connection, fitted with a double outlet, three way stopcock, and a suitable obturator was also devised. To take the intracranial pressure the patient should be placed in the horizontal position with the spine forming as nearly a straight, horizontal line as possible. The needle is then to be inserted through the space between the fourth and fifth lumbar spines, the obturator withdrawn, and the moment a drop of spinal fluid appears in its opening the stopcock is turned to shut off the escape. Then the manometer is connected and the pressure read directly on the mercury column. While still connected with the manometer fluid may be withdrawn to the desired amount and the pressure read from time to time for control, or injections may be made through the second outlet of the needle. The normal pressure was found to be from eight to ten mm. Hg. Readings above twelve mm. under proper conditions should be regarded with suspicion, and those that were materially higher were indicative of abnormal intracranial pressure. Increased pressure was never found in purely functional disturbances, but was commonly found in various forms of spinal or intracranial disease. Exact data have not yet been obtained, but the readings seemed to give a much earlier indication of increased intracranial pressure than was shown by any other method, including the examination of the ocular fundus.

Poliomyelitis.—Charles V. Craster (*Journal A. M. A.*, May 26, 1917) concludes from a study of the recent large outbreak of epidemic poliomyelitis in Newark that the infection was carried originally by a healthy adult whose daily work took him to New York. That the subsequent development of small areas of incidence of the disease indicated the infection from a single case of exceptional virulence also seemed evident. It was not possible to determine the precise mode of transmission but it seemed to be through some human agency, although no outbreaks could be traced to direct contacts with any certainty and none to gatherings of children in schools. There were relatively few instances of more than one case in a family and none of the transmission of the disease in hospital wards. No food seemed responsible and the common domestic animals did not seem to spread the disease. The prevalence among the latter of paralytic diseases was exaggerated due to the focussing of attention on them. Almost eighty-four per cent. of all cases occurred in children under five years of age and over eighty-five per cent. of the deaths occurred in the same age group, although the highest mortalities were recorded among those under one year and between twenty and twenty-four years of age.

Unrecognized Congenital Syphilis.—R. Sabouraud (*Presse médicale*, May 17, 1917) divides cases of inherited syphilis into five groups, the last two of which remain unrecognized because their characteristics are not fully known to the practitioner. The first three comprise the stillborn, those who die within a few years of birth, and those who survive longer, exhibiting such stigmata as dwarfism, cranial or facial deformities, low intellectual capacity, and distinctive cutaneous or special sense lesions. The fourth group exhibits merely oral stigmata, including, besides prognathism ,deformity of the upper jaw and approximation of the two superior maxillary bones, such dental defects as eversion or inversion of the teeth, imbrication of two incisors, the growth of a molar from the vault of the palate, complete or partial microdontia, Hutchinson teeth, and, most frequently of all, striated or pock marked teeth—with brownish discoloration of the enamel free depressed areas—together with "screwdriver teeth" and partial loss of enamel about the crowns of the molars, which become irregular in shape and later worn down and flat. Such patients are apt to have a history of numerous and varied diseases in early childhood, to which presumably the syphilitic infection may have predisposed. The fifth class, which outnumbers all the others, is that of syphilitic children who are supposed to have completely escaped the paternal taint. It is a mistake to believe that in a family with several children, complete absence of miscarriages implies absence of syphilitic infection. Everything depends on the severity of the infection in the father and the treatment he has received before marriage. That a father whose syphilis has been passably treated may have healthy children is a mistaken notion too generally believed in. In all cases where syphilis is known to have existed in the father, and no matter what treatment he has received, a Wassermann test should be made in the children coming under observation—if necessary, under pretense of estimating the urea of the blood, or with some other excuse. If this is systematically done, the appalling extent to which syphilis figures in general morbidity will be realized. Mere lack of harmony in the conformation of the body should be held somewhat suggestive of congenital syphilis. Low stature, thin chest, a spinal column with doubtful curves, or a striking ugliness of the face are in themselves of some value as indications of congenital syphilis. Careful attention should then be paid to the cranium, eyes, ears, and teeth. Supplementary ledges on the inner aspects of the upper first molar teeth, recently described by the author, constitute the ultimate trace of syphilis remaining in children whose syphilitic father has received treatment before marrage and believed himself cured. This sign Sabouraud has noted in almost a third of all children recently seen by him. So frequently do ichthyosis, extensive alopecia, psoriasis, prurigo, periauricular eczema, and eczema of the elbow and popliteal regions coexist with this dental sign and a semipositive Wassermann, that some predisposing relationship of syphilis to these skin affections must be considered probable. Syphilitics as a class must be treated more promptly and thoroughly than has hitherto been the case and must not marry until symptoms have been absent and the serum reaction negative for two or three years without treatment.

A New Disease Simulating Acute Rheumatism.—Chantemesse, Martruchot, and Grimberg (*Bulletin de l'Académie de médecine*, May 29, 1917) report the case of a woman thirty-seven years old, with a history of a rheumatic attack fourteen years before, who was admitted complaining of joint pains of two weeks' standing, increasing in severity and accompanied by lassitude. Pallor and dyspnea were noted, the pulse rate was 110, and the temperature 40° C. Profuse sweats, a dry tongue, an apical systolic murmur, and slight albuminuria were also noted. Six grams a day of sodium salicylate was ordered, and in two days the temperature descended to 38.6°. Next day, however, meningeal symptoms supervened, with intense headache, great restlessness, tremor, and increasing fever. Two days later, marked but temporary diarrhea was noted. After another two day interval restlessness gave place to coma, and death followed. At autopsy the cranial contents showed congestion, hemorrhagic spots, and edema. In the recent endocardial foci and in the pia, cortex, and cerebrospinal fluid were found numerous examples of a new type of microorganism, appearing in thin, short rods in a young culture and in heavier, much longer, often curved organisms, progressing by a spirillar movement. In old cultures the organism showed long, branched forms, which later broke up into short rods, each developing in its centre a spore. This mode of sporulation distinguishes the organism from the actinomycetes and its mycelium from the bacilli proper—hence the new generic name, Mycobacillus synovialis, which the writers propose for it. Injection of the organism into rabbits often caused arthritis and endocarditis, usually with diarrhea at a certain period of the disease.

Late Cephalic Tetanus with Recrudescence Due to Surgical Intervention.—G. Gross and L. Spillmann (*Bulletin de l'Académie de médicine*, April 24, 1917) report the case of a soldier wounded in the face and back, who was subjected to operative procedures in both of these situations for the removal of numerous small shell fragments. Tetanus antitoxin had been given both before and after the injury. One month later, facial paralysis on the side of the facial wound appeared; the malar bone was curetted and an additional minute shell fragment removed. The paralysis, attributed at the time to the local injury, but actually the first manifestation of cephalic tetanus, persisted and to it were added in three weeks sharp pains in the side of the face and a slight contracture of the sternomastoid. In a few days this contracture increased and swallowing became difficult, and after an additional month trismus was such as to require an exclusively liquid diet, and a painful abdominal contracture supervened which pointed unmistakably to tetanus. Daily large injections of tetanus antitoxin were then started, with twelve grams of chloral hydrate daily and hot baths to overcome the abdominal contracture, with the result that complete recovery took place in seventeen days. The case is especially peculiar in that no less than three and a half months elapsed between reception of the injury and generalization of the tetanus symptoms.

Anaphylatoxin and Anaphylaxis.—F. G. Novy and P. H. DeKruif (*Journal A. M. A.*, May 26, 1917) observed that Trypanosoma brucei produced symptoms analogous to those of anaphylaxis when injected as dead cultures into the lower animals, that these same organisms, when allowed to act on rat serum rendered it extremely toxic for guinea-pigs through the production of anaphylatoxin; and that this toxic substance was not derived from the bodies of the trypanosomes, but was produced by them from the serum upon which they acted. It was also found that other substances, including bacteria, agar, distilled water, etc., were capable of causing the same phenomenon of the production of anaphylatoxin. Further study of the production of this toxic substance and the phenomena of anaphylactic shock showed they rested on a basis entirely different from that usually accepted. The matrix of the poison which was produced was always present in the blood serum or plasma and was liberated therefrom by a variety of different agencies. The phenomena of anaphylatoxin production was not connected with the problem of immunity except in so far as the ready response of the labile toxic matrix of the serum was thus affected. The production of the toxin was closely similar to the production of fibrin from fibrinogen and the two processes seemed to have certain close relationships, since anaphylactic shock was known to be associated with the development of incoagulability of the blood. It seemed better, therefore, in view of the new facts, to adopt a new nomenclature for the toxin and its predecessor. Since the phenomena were associated with some disturbance in the labile toxin matrix the name suggested for this matrix which was so subject to change was "taraxigen," for the toxin "taraxin," and for the disturbed state caused by the production of the poison, "taraxy." Substances developing within the animal were found also to be capable of inducing taraxy or anaphylaxis, as it was called. It was found that the presence of a relative excess of alkali in the blood serum or plasma would prevent or largely inhibit the production of taraxin and the administration of sodium bicarbonate or other alkali was suggested for the treatment of those human cases in which the phenomena here described were found to occur.

Complement Fixation Tests in Tuberculosis.—H. J. Corper and H. C. Sweany (*Journal A. M. A.*, June 2, 1917) call attention to the wide divergence in the results reported by different investigators in the field of complement fixation in tuberculosis. But few comparative studies have been made in this field using more than one antigen on a given series of serums. The authors conducted such an investigation, employing for comparison the antigen described by Miller and Zinsser and a tubercle bacillus autolysate of their own preparation. Both antigens were polyvalent. Comparatively little difference was shown in the results from these two antigens, but the autolysate seemed preferable because the results were less transient and a satisfactory antigenic unit was more readily established. Neither of the antigens gives results which indicate whether the tuberculosis is active or inactive, although active cases give a slightly greater number of positive reactions than the inactive ones. The presence of a positive Wassermann reaction renders the results untrustworthy for the drawing of conclusions, but a positive or negative reaction in the absence of a positive Wassermann test is of some differential diagnostic value as indicating the presence or absence of tuberculosis.

Action of Bacteria and Dressing Solutions on Catgut Ligatures.—Kenneth Taylor (*Journal A. M. A.*, May 26, 1917) carried out a series of experiments with No. 0 and No. 1 plain and chromic catguts to determine the effects of the common organisms found in infected wounds and of the commoner dressing solutions in the hope of explaining the causes of secondary hemorrhages. He found that Bacillus aerogenes capsulatus attacked and eroded both forms of catgut and was the only organism which did so among those tested, which included Bacillus malignans œdematis, the Hibler bacillus, Streptococcus pyogenes, Staphylococcus aureus, Bacillus pyocyaneus, Bacillus proteus and Bacillus lactis aerogenes. The dressing solutions used were the Carrel-Dakin hypochlorite solution, 0.5 per cent. betanaphthol in 0.1 per cent. sodium hydroxide; one per cent. sodium hydroxide; mercuric chloride 1:10,000; one per cent. phenol; five per cent. sodium chloride; normal saline; one per cent. acetic acid; one per cent. sodium perborate and distilled water. None of the solutions diminished the tensile strength or elasticity of the gut, but the Carrel-Dakin solution made the gut so slippery that no knot would hold under more than two and one half ounces of pull. It seemed that the presence of Bacillus aerogenes capsulatus and the use of the Carrel-Dakin solution might be possible causes of secondary hemorrhage through erosion or loosening of the ligatures about the larger vessels.

Proceedings of Local and National Societies

AMERICAN GYNECOLOGICAL SOCIETY.

Forty-Second Annual Meeting, Held at Pittsburgh, Pa., May 31 and June 1, 1917.

The President, Dr. FRANK FARROW SIMPSON, Pittsburgh, Pa., in the Chair.

A Histological Study of Fifty Uteri Removed at Cæsarean Section.—Dr. J. WHITRIDGE WILLIAMS, of Baltimore, presented a study of uterine contraction and retraction before the separation of the placenta; also a study of the mechanism of the separation of the placenta, the amount of decidua retained after separation of the placenta, and the vascular changes at the placental site, and pointed out some of the indications for the removal of the uterus, notably ascending uterine infection. He likewise presented a study of the scar resulting from previous Cæsarean section.

Dr. EDWARD P. DAVIS, of Philadelphia, was of the opinion that once a Cæsarean section had been done, spontaneous labor might occur in the same patient without any complications whatsoever; furthermore, a Cæsarean section, properly done and not followed by infection, led to an absolutely sound uterus without connective tissue. As regards the separation of the placenta, clinically those means might be disregarded immediately which lessened its bulk after the birth of the child; the clinical phenomena, aside from histological findings of simple separation, varied greatly. Those who had had considerable experience in Cæsarean section realized that the danger point was the removal of the uterine body in all doubtful and suspected cases. While it was difficult to say positively that a woman whose uterus was infected could not recover, he thought far more lives would be saved in doubtful cases by hysterectomy than by leaving the uterus. He had never regretted removing the body of the uterus in all suspected cases, and he did regret not having done so in some cases.

Dr. EDWIN B. CRAGIN, of New York, said that he wished to utter a word of caution as to the relative safety of a uterus on which Cæsarean section had been done, especially if the Cæsarean section was done for obstruction. All specialists appreciated the fact that if a uterus was properly sutured and the puerperium was without infection, the uterine wall would be relatively sound if the original operation was done for such a condition as placenta prævia or eclampsia; but the general practitioner should always bear in mind in the case of a uterus upon which one Cæsarean section had been done, that if the section was done for obstruction it was quite possible that the puerperium would not be absolutely free from infection. A woman working her way in labor in the second stage with a scar following a puerperium and not free from infection, was exposed to the risk of a rupture.

Dr. CHARLES A. L. REED, of Cincinnati, stated that one point of practical interest was the time factor involved in the successful cicatrization of the Cæsareanized uterus. He had had occasion to do myomectomy on two cases—a unique coincidence—in which the injury to the uterus was done through Cæsarean section. In both he operated in the presence of an early pregnancy. The pregnancy was not interrupted. Cicatrization occurred very promptly.

Dr. JOHN O. POLAK, of Brooklyn, New York, stated that the point that had impressed him in Doctor Williams's paper was the fact of fifteen hysterectomies having been done following Cæsarean section. This statement was absolutely out of harmony with his experience as to the frequency of the necessity of this operation following Cæsarean section. Even with the twenty infections, a large proportion of these women had had their uteri removed unnecessarily. It was likewise the experience of his colleagues in Brooklyn that they had not adopted the suggestion of Doctor Williams or of Doctor Davis of doing hysterectomy, but had treated these infected cases by the extraperitoneal method where they knew infection had existed from the history and by repeated examinations through the vulva, and had dealt with these cases on the modified principle of the suggestion of Sellheim.

DR. HERMAN J. BOLDT, of New York, said he had had one opportunity of doing myomectomy during pregnancy. The woman was four months pregnant and showed symptoms of impending abortion. The myoma was enucleated because of the symptoms present. This woman made a good recovery and went on to term without any trouble whatever.

Dr. JOHN G. CLARK, of Philadelphia, said that in connection with the subject discussed by Doctor Williams, Doctor Goodell, of Montreal, brought out a rather interesting explanation a few years ago of the so called myopathic hemorrhages which occurred in women thirty-five years of age and older. Doctor Goodell believed at that time that the subsequent reconstitution of the bloodvessels in the uterus after the puerperium was due practically to the threading of new vessels into the old and their construction in that fashion. He believed that in the majority of women with myopathic hemorrhages at forty years of age and over the uterus would be patent up to the menopause, when there was a failure and bleeding because of successive rings. He had three or four specimens showing apparently one bloodvessel within the other.

DR. HIRAM N. VINEBERG, of New York, stated that a puerperal uterus that, was highly septic could not be removed without causing a more severe infection. Doctor Williams had had twenty cases of infection, and the conditions at the time of operation were most favorable for the spread of infection, yet these uteri were all removed with recovery. The point he wished to emphasize was that these uteri could be removed with safety, and that there must be suitable cases in which the uterus could be removed and the patient's life saved.

Dr. E. GUSTAV ZINKE, of Cincinnati, had had a case of a woman on whom he made two Cæsarean

sections, the first time for an elongated cervix and placenta prævia, both pronounced. She had a perfectly normal recovery. She became pregnant two months after Cæsarean section and went near the end of term, when he was requested to attend her in confinement. He told her he would do so provided she would submit to another Cæsarean section, and he based his position entirely upon the fact that she had an elongated cervix. To overcome this obstacle necessarily meant a prolonged stage of labor, and not knowing exactly the character of the uterine scar, he did not wish to take any chances. She promptly submitted to another Cæsarean section, and it was performed as nearly at the end of term as he could calculate and before the symptoms of her labor began after the cervix had been obliterated. To his surprise he found it was another case of placenta prævia. The placenta was situated in the lower segment of the uterus, almost centrally implanted. Of the first scar hardly anything could be noticed. The first incision was made transversely near the fundus; the second he made longitudinally, and in both operations the abdominal incision was made above the umbilicus. She recovered from this operation promptly.

Dr. J. Riddle Goffe, of New York, supposed that all who had had experience in removing fibroid tumors had made observations in reference to the healing of the wound later, and it had appeared to endure subsequent pregnancies. He had operated upon three patients from whom he removed fibroid tumors and they had afterward become pregnant A recent case was one in which he operated for fibroid tumors at the fourth month of pregnancy. The tumors were removed, and a miscarriage promptly occurred. Since that time the woman had been pregnant twice and had borne children normally. The deliveries were perfectly normal.

Dr. William E. Studdiford, of New York, stated that he had had in the past year and a half two experiences with rupture of the Cæsarean scar, the latter one occurring about ten days ago. In both of these cases the women went into labor prematurely. In the first case the condition was not recognized, and the prolonged pains led the attending physician to attempt further dilatation of the cervix by the use of the bag, with the result that the woman became infected, and at the time of operation the fetus and membranes were within the abdomen. The uterus had retracted, and the woman died within twenty-four hours after operation.

Dr. George Gellhorn, of St. Louis, Mo., said that there were cases in which a very slight subfebrile temperature ran for ten to fourteen days after Cæsarean section, suggesting the possibility that the wound had separated partially. He had had the opportunity of observing one woman who died about five weeks after Cæsarean section from a cause unconnected with the operation. She had a very slight rise in temperature, not more than 99.2° or 99.4° F. for ten days, for which he was unable to find any cause. At autopsy he found the endometrial side of the incision had separated and gave a picture identical to that shown by Doctor Williams. It was very essential to pay attention to these slight rises of temperature and arrange for the management of the next labor accordingly.

Dr. John A. McGlinn, of Philadelphia, did not believe the dictum "Once a Cæsarean section, always a Cæsarean section," was true by any means. Such a dictum was dangerous. It was simply a catch phrase which remained in the minds of many people who were not able to discriminate. It should be eradicated from the literature, because the general profession and even the public took hold of this catch phrase and would not allow cases to be Cæsareanized when they should be.

Dr. Franklin S. Newell, of Boston, said that he believed that in subsequent Cæsarean section the uterine scar could never be depended upon. He had removed three scars at operation during the last winter. In two of them there was a febrile course after the first operation. One of the scars left a mass of muscular tissue which ran through the middle of it, and he believed that if that patient had gone into labor she would have had a rupture. He did not believe that the mortality following Cæsarean section before labor was as high as two per cent. These cases should be selected carefully, and he thought a woman ran less risk in having Cæsarean section done in a subsequent labor under proper conditions.

Avoidance of Shock and Trauma in Treatment of Eclampsia.—Dr. Edwin B. Cragin, of New York, said that in the first series of 20,000 deliveries at the Sloane Hospital, New York, with 251 cases of eclampsia, the maternal mortality was seventy-one, or 28.28 per cent. The fetal mortality was 151, or 60.15 per cent. In the last series of 15,774 deliveries, with 138 cases of eclampsia, the maternal mortality was twenty, or 14.49 per cent. The fetal mortality, including stillbirths and infants dying before the mother left the hospital, was sixty-two, or 44.92 per cent. The reduction in mortality had been brought about by avoiding shock and trauma; by avoiding chloroform; by preparing the cervix before delivery; by avoiding accouchement forcé; and by treating the toxemia while preparing the cervix.

Dr. J. Whitridge Williams, of Baltimore, agreed with everything that Doctor Cragin said about sparing the patient all possible shock during delivery. Unlike Doctor Cragin, he had in the last few years resorted to bleeding, which had had a good effect in many cases of eclampsia, consequently it was almost a routine in his service now to bleed every woman with ante partum eclampsia. He made a practice of drawing 750 to 800 c. c. In a certain proportion of cases this procedure ended the misery. The woman had no more convulsions, albuminuria fell, and the nitrogenous constituents of the urine rose just as though she had not been bled. These women occasionally went on for some weeks or even months and had a baby at term without further eclampsia.

Dr. Reuben Peterson, of Ann Arbor, Mich., said that long ago he gave up the use of chloroform in the treatment of eclamptic women. The field of Cæsarean section, both vaginal and abdominal, had been limited for a number of reasons. Abdominal Cæsarean section, was limited in a hospital that ad-

mitted all kinds of obstetric cases because usually so many vaginal examinations had been made. If there was any risk of sepsis, one should work from below. All the methods indicated by Doctor Cragin should be tried, but an abdominal Cæsarean section should not be resorted to. His investigations of both abdominal and vaginal Cæsarean section had shown conclusively that if a case could be taken early in the eclampsia, both operations were remarkably successful in saving both the mother and the child. He had seen good results from bleeding, but had not obtained satisfactory results from the use of veratrum viride.

Dr. Brooke M. Anspach, of Philadelphia, asked Doctor Cragin and Doctor Williams in how many cases of eclampsia they found acetone and diacetic acid in the urine, and how they met the condition of acidosis. During the last year he had a patient in whom very serious symptoms of toxemia developed more than two weeks after delivery. The woman had three severe convulsions in one day. She showed remarkable improvement after the intravenous injection of a pint of a two per cent. solution of sodium bicarbonate, and she had another injection the next day and recovered.

Dr. Edward P. Davis, of Philadelphia, said that he would not deliver a woman in eclampsia and toxemia unless she showed signs of going into labor; then he would assist her with the least possible traumatism. His objection to the use of the bag was the fact that its long continued pressure sometimes exhausted these patients and led to convulsions. Abdominal Cæsarean section was rarely indicated and vaginal Cæsarean section still more rarely. He had come to have a high regard for venesection in eclampsia if it was followed by the use of salt solution or sodium bicarbonate in the vein.

Dr. Harold C. Bailey, of New York, stated that eclamptics were particularly prone to shock. Accouchement forcé had been discontinued in the Bellevue Hospital service. In 1900, when he took systolic blood readings, several eclamptics were delivered by that method and in several instances he found there was a drop of 100 millimetres Hg. He then made blood pressure readings following the use of veratrum viride, and in one instance in which the drug was pushed he found a drop of 140 millimetres Hg with the woman in profound shock. Since that time he had not used veratrum viride previous to delivery. As regards vaginal and abdominal Cæsarean section his views were in accord with those of Doctor Cragin.

Dr. E. Gustav Zinke, of Cincinnati, said that the principal cure for puerperal convulsions lay in prophylaxis during the pregnant state. Some pregnancies terminated fatally in spite of treatment. It was often a question of whether the case would yield to treatment, or whether the patient would get well in spite of treatment and sometimes because of neglect. About five weeks ago he was asked to see a woman in consultation with a pronounced case of albuminuria. She had edema up to the shoulders almost and her urine was loaded with albumin. She was at the end of the eighth lunar month. He ordered gentle saline catharsis, a hot bath every day, and an absolute milk diet, and expressed the opinion that this treatment would probably precipitate labor, and if it did, it was much better for the patient. She was brought to the hospital three days after she had delivered herself spontaneously of a living child. The albumin slowly disappeared. The milk diet was kept up and she was given a hot bath every day and veratrum viride. Her pulse was never very high. Ten days after labor she had her first convulsion which left her with left sided paralysis, and in spite of all that was done she had three other convulsions and died.

Doctor Cragin, in closing the discussion, said that in regard to diacetic acid and acetone in these cases of eclampsia, he recognized all types of cases. In one type the liver was least involved; in another the kidney was more involved. When the liver was the organ more involved, acetone and diacetic acid were apt to be present, and he had found soda to be a valuable aid.

(*To be continued.*)

THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

One Hundred and Eleventh Annual Meeting, Held at Utica, April 24, 25, and 26, 1917.

The President, Dr. Martin B. Tinker, Ithaca, in the Chair.

(*Concluded from Volume CV, page 957.*)

Treatment of Syphilis of the Brain and Cord by Subdural Injections of Salvarsanized Mercurialized Serum.—Dr. S. T. Nicholson, of Clifton Springs, stated that of fourteen patients with syphilitic infection of the central nervous system treated by subdural injections of salvarsanized mercurialized serum, nine with tabes dorsalis showed marked improvement. Two paretics did not do well, but two cases diagnosed as cerebrospinal syphilis showed improvement, and a third patient discontinued treatment too early to permit conclusive observations. In reviewing these cases it was observed that the patients were loath to return for observation and treatment until the beneficial results, as evidenced by the laboratory findings, were as satisfactory as the functional improvement. Since the Treponema pallidum was demonstrated in paretic brains, a pathological classification of the nervous types of the disease had been made: 1, the interstitial type, also classified under cerebrospinal syphilis in which there was gummatous formation, meningitis luetica, and meningoarteritis; 2, the parenchymatous type previously known as parasyphilis, in which there was a destruction as well as irritation of the nervous elements; and a possible third type in which the lesions were vascular and the nervous disturbances were due to the changes in the circulatory system.

The most rapid results in functional recovery were obtained in the interstitial type, in which there was gumma formation. The tabetic cases, classified under the parenchymatous, responded well to treatment.

The methods of choice of intraspinal therapy were as follows: 1, the salvarsanized serum of Swift and

Ellis; 2, the Ogilvie method; 3, the Byrnes method, which was the basis of his report. Doctor Nicholson said that the results of the combined use of 1 and 3 had been very encouraging. However, salvarsan was not found in the blood an hour after injection. He had bled patients earlier and as Doctor Byrnes had reported originally, had noted in addition the beneficial effects of a mercurialized serum due to previous treatment of the patients by general mercurial therapy. He preferred to inject mercurialized salvarsanized serum intraspinally primarily because the treatment might be adjusted to the individual case. The mercurialized serum was a stable product and might be used at any time. Two years' experience with the Byrnes method led him to feel that it should not be discarded until some other therapeutic agent was discovered which would possess many added advantages. Pain, muscular spasms, nervousness, headache, ataxia, and reduced or lost sphincter control had all been relieved fully or partially, but by far the most important result was the possibility of restoration of some of the patients to their active pursuits of life.

Dr. MALCOLM S. WOODBURY, of Clifton Springs, said that treatment by the Byrnes method had never produced any severe reactions. He had known of instances in which quite severe reactions had followed the subdural use of medicaments. Surgical treatment should not be disregarded and all these patients should have the benefit of a treatment of this kind. He had not had good results in treating paretic patients, but the treatment of cerebrospinal syphilis gave very encouraging results.

Dr. HENRY L. WINTERS, of Cornwall, stated that in his experience in treating cerebrospinal syphilis and other conditions of the nervous system he had not used the mercurialized serum. His experience had been somewhat similar to Doctor Nicholson's. Good results were obtained in the active syphilitic processes. He had been able to arrest the progress of the disease in seventy-five per cent. of thirty patients whom he had treated in that way. In early tabes cases he had not been so successful.

Symptomatology of Peptic Ulcer.—Dr. GEORGE R. LOCKWOOD, of New York, said that various tests —the string test, the x ray, the gastric analysis, and laboratory reports—were often resorted to to save time and to avoid the proper clinical examination. The x ray was of tremendous value, but it had its limitations. In duodenal ulcer it was disappointing and he was inclined to discard its evidence. The string test was unreliable. Gastric analysis might or might not be of help. A double test should be used, one for the empty stomach in the early morning for hypersecretion, and a test breakfast for hyperacidity. Hyperacidity as shown by charts was not necessarily a sign of ulcer, for in chronic ulcer fifty per cent. of gastric secretions were normally acid. The general characteristics of ulcer were the regularity of hunger pains and the relief after eating. Differential diagnosis between ulcer and chronic appendicitis in which this symptom was also prominent, could be made by careful charting of the regularity of these pains before breakfast, lunch, dinner, and bed, and the time of relief by food; it would be found in the long run that pains in chronic appendicitis varied from the clocklike regularity of those in ulcer; pain overlapped a meal, or lasted all day. A confusing point was that in late ulcer there was continuous pain with vomiting of sour acid fluid. This was, however, characteristic of ulcer. The diagnosis was not easy to make; it required time, patience, and careful checking up by laboratory data. Only operation made the diagnosis certain and final, and even then the question was frequently opened by the pathologist's report.

Practical Pathology of Peptic Ulcer.—Dr. JAMES EWING, of New York, said that opinions regarding the frequency with which cancer developed on ulcer of the stomach varied from five to seventy per cent. This discrepancy suggested that the criteria of this condition were not clearly recognized or employed in diagnosis. Statistical, clinical, anatomical, and microscopical data bore upon this problem. Statistics showed that healed ulcers were common at autopsy; that the chief age of incidence of ulcer was between twenty and thirty years, that of cancer between fifty and sixty years; that of ulcer was much more common in females and cancer was more frequent in males; and that the common sites of ulcer and cancer were not identical. Clinical observations showed that a history of ulcer long preceded cancer in the typical cases; that cancer had followed gastroenterostomy for ulcer no more frequently than after resection of the ulcer; that about two per cent. of ulcers long treated medically developed into cancer. The anatomical appearance of undoubted cases of ulcer carcinoma had usually been characteristic, the cancer beginning at one point of the ulcer and leaving the base free. Microscopically there were a moderate number of cases of chronic ulcer which showed suspicious precancerous changes, but these might not be safely regarded as equivalent to cancer. The great majority of chronic ulcers were free from such changes.

X Ray in Peptic Ulcer.—Dr. L. G. COLE, of New York, said that he had long felt that the ascending portion of the stomach had characteristics altogether of stomach, and not of duodenum. Osler's observation corroborated this. He therefore referred to peptic ulcers as being prepyloric or postpyloric, the latter being beyond the sphincter. Morphologically the disease was surrounded by an area of induration and might go down to the muscular coat or farther. That region of the stomach was rendered less pliable as a result and cicatricial contractions or adhesions might be associated with it. He believed that a small, early ulcer could be diagnosed as accurately by serial röntgenology as a fracture of the long bones could be discovered by a single röntgenogram. He showed slides showing the deformity of the cap of the stomach, cicatricial contraction, burrowing ulcer, and small healed ulcer.

Medical Treatment of Peptic Ulcer.—Dr. LUDWIG KAST, of New York, said that the selection of patients for surgical or medical treatment was important. Patients with perforated ulcers and those having repeated serious hemorrhages should be operated upon after delay. "Surgical as soon as feasible" were patients with chronic ulcers, needing preparatory, rigid, medical treatment, those with indurated ulcers, those penetrating ulcers and hour

glass contractions, and those suspected of malignancy should be operated upon as soon as feasible. Borderline cases were those where there were no facilities for medical treatment, and neurasthenic cases, particularly those dependent upon anodynes. Surgical cases were all improved by medical preparation. Medical treatment was directed chiefly toward reducing gastric secretion and neutralizing hydrochloric acid as far as possible. The work of Rosenow made it highly probable that peridental infections, and tonsillar, and appendicular infections might be etiological factors. Important points in the treatment were the covering and protecting of the ulcerated surface by use of bismuth, giving of acid binding foods, giving of alkalies; checking of gastric secretion, by proper arrangement of diet avoidance of foods that stimulate gastric secretion. If the patient was still dependent upon a restricted diet after several weeks of medical treatment, surgery should be resorted to.

Surgical Treatment of Peptic Ulcer.—Dr. J. B. Deaver, of Philadelphia, included under peptic ulcer, gastric, duodenal marginal, and jejunal. Jejunal ulcer could occur only as a distinct pathological entity, although it was more commonly met with as a sequel to gastroenterostomy. Gastric and duodenal ulcers comprised two varieties, perforative and nonperforative.

Focal infection no doubt played an important part in the etiology. Gastric ulcers were often secondary to chronic appendicular infections. In the treatment of peptic ulcer the surgeon and the bacteriologist had done very much. It was undoubtedly true that strains of streptococci had a selective action for the tissue of the stomach and duodenum; a metastatic infection was often dangerous. Excision of the ulcer was the best safeguard against carcinomatous degeneration. Gastroenterostomy, although not so efficacious as pylorectomy, should be advised when obstruction was present. The diagnostic symptom of duodenal ulcer was the board like rigidity of the abdomen. The so called internist should be called externist, as he never went into the abdomen until the post mortem, and then he had someone else do it for him.

Dr. Fenton B. Turck, of New York, said that one great point made by Doctor Deaver was the etiological rôle of bacteriology in gastric ulcer. Recent advances led most surgeons to agree that the conditions were of bacterial origin. He had left the surgical field to go into experimental work and had spent twenty-five years in the laboratory. He had found that bacteria penetrated into the intestinal wall and passed into the pyloric region, and had produced thirty-six cases of ulcer experimentally. The injection of bacteria from teeth and tonsils into the blood did not cause infection; it was an autolysis, but not an infection. Peptic ulcer was not produced in that way. In his experiments he had fed the animal with beef and fatty acids and had caused migration of bacteria into the intestinal walls. They passed into the submucous membrane and increased ferments in the pylorus and caused autolysis.

The surgeon knew how to treat these cases because he saw the conditions. There was no recurrence after suture of the perforation because immunity was produced by the intestinal flora and an autovaccination took place.

Dr. Leon T. Lewald, of New York, said that the consideration of syphilis of the stomach had been omitted in the discussion of differential diagnosis. The surgeon should not operate in cases which were a distinct clinical entity. In syphilis of the stomach there was a cicatrization causing pyloric stenosis. The following findings, which were as definite as those of carcinoma, were characteristic: The esophagus was generally found dilated; the calibre of the stomach was very much reduced, and the ordinary quantity of food could not be taken into the stomach, consequently there was regurgitation; and there was a lack of hydrochloric acid and very little secretion because the stomach as a rule emptied very rapidly. Surgeons had resected stomachs that they supposed were carcinomatous, and yet they were proved to be syphilitic by microscopical examination. He had followed up gastroenterostomy cases and had gone to many operations to see the nature of the pathological process, and in only one case had he seen definite carcinomatous change following ulcer. The symptoms in some cases were due to gastric hernia.

Dr. William Skinner, of Geneva, stated that in diagnosing gastric ulcer, slight palpation disclosed a peculiar kind of rigidity over the location of the ulcer. In regard to the treatment of gastric ulcers by posterior gastrojejunostomy, he had had an interesting case in which there was a history of ulcer for twenty-one years. A gastrojejunostomy was done with relief of symptoms for six years, then there was a severe hemorrhage, and a pylorectomy was done. The ulcer had been eating out on one side and healing on the other. After the pylorectomy the patient was well for two years, then had another hemorrhage. An ulcer was found on the anterior wall of the stomach, was excised, and sutured from the inside and the gastrojejunostomy enlarged. The man recovered.

Dr. Alfred W. Armstrong, of Canandaigua, said that he had had a case of perforation of the stomach about the size of the little finger. It allowed the dinner to escape, and about three hours after the meal he sutured up the opening. The patient had a hemorrhage two months later. Two years later he had a posterior jejunostomy, and the symptoms were relieved.

Doctor Hirsch, of New York, stated it was not true that every ulcer should be excised; if it was, the diagnosis would be simplified. It would be sufficient from the radiographer's viewpoint to determine the pathological condition; whether ulcer or carcinoma was not important. But not all surgeons agreed with Doctor Deaver. They wanted to know whether it was early carcinoma or not. Consequently the question of diagnosis was extremely difficult. The x ray had done far more than stomach tubes or string tests, but the plates presented by Doctor Cole were not conclusive on that particular point. Some areas had been called carcinomatous degeneration. Carefully differentiated diagnosis could not be made on morphological evidence. Erosion did not change the stomach sufficiently and functional changes must be considered in ulcer cases. The diagnosis of cancer was not simple on morphological grounds.

Doctor Levy, of New York, said that infection as an etiological factor was probable, but it was not proved. Thalhimer and others at Mt. Sinai had tried to prove Rosenow's conclusions, but had not been able to do so. Bacteria would occur on any ulcerated surface. The ulcer was not a primary condition, but a secondary. In regard to the x ray, he had seen a chronic ulcer diagnosed as chronic appendicitis on the x ray findings. A simple examination showed the man had a penetrating ulcer which was overlooked. Doctor Cole's plates showed marked indurating ulcer, but he did not see early ulcer. Superficial ulcer could not be shown because one could not make the bismuth adhere long enough to get a shadow. He did not feel that surgeons, outside of Philadelphia, had demonstrated that surgery was the best treatment.

Doctor Cole, in closing on his part, said that Röntgen ray diagnosis would result in fewer failures. In one case he had begged for a surgical procedure, although the man had but few symptoms. Finally the ulcer perforated and an emergency operation was necessary. In regard to malignancy, the statistics could be collected only after a long period of years to determine what percentage became malignant.

Letters to the Editors

TAKE YOUR OWN MEASURE.

Philadelphia, *July 21, 1917.*

To the Editors:

The first step in the conservation of one's own powers is to take account candidly of personal stock. No man in any line of endeavor can do justice to his own capabilities and proficiencies until he has set down the items, assets and liabilities, one over against the other. I have long urged patients thus to take a survey of themselves and find it of practical advantage as a point of departure, a new start on the road to "Oneselfville." Recently I had occasion to confer with a number of capable, energetic, and patriotic medical colleagues determined to offer their services to the government, who for one or other reason could not get a regular commission. The question was, what could each one do; what particular form or kind or degree of service could each one offer? Every one of them had achieved more or less distinction as a specialist or through large and well digested and winnowed experience. Of course, some of these overelaborated proficiencies would be of little or no immediate or direct availability in military or naval service, yet there was much that each one had over and above this; also many of these trained aptitudes were capable of being transformed and transmitted within or along the needed lines.

I recommended that each man should frankly write out at length a sort of professional confession—"*confessio medicis*"—candidly set in orderly fashion a grouping of his tastes, facilities, experiences, his successes in meeting confusing exigencies, what particular attention or courses of study has been devoted to these trends and aptitudes, then to summarize the assets and liabilities, as a series of debits and credits. Of course, in rendering a report to the government only those outstanding points need be stated which bear directly on the question of military service; the rest is for home consumption. When you come to think about it, how vastly better it would be for us and for our clients if we would undertake only that which we felt confident in the doing well and if we would decline what we knew we were lame at performing! To be sure, this the successful man decides to do soon or late. The time will come when these gradations will be more feasible and more welcomed.

In offering mature medical services to the government, much of which must be partly gratuitous or voluntary, there is much to be said in favor of this scheme. It is fundamentally sound in principle. Whether it will be so regarded as acceptable by the surgeons general United States Army and Navy remains to be seen. Meanwhile I commend this means of enhancing pragmatic personal assessments of professional abilities to the readers of the New York Medical Journal. It seems to me that every capable practitioner who has won his spurs, or is close to the winning of his accolade, and who begins to be sure of what he wishes to continue doing and what he desires earnestly to avoid being compelled to do, should make such an economic survey of his own parts and powers, and to revise at regular intervals.

J. Madison Taylor, M. D.

Book Reviews

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

The Treatment of Tabetic Ataxia by Means of Systematic Exercise. By Dr. H. S. Frenkel, Medical Superintendent of the Sanatorium Freihof in Heiden, Switzerland. Second Revised and Enlarged English Edition. By J. Freyberger, J. P., M. D. (Vienna), M. R. C. P. (London), M. R. C. S. (England); Barrister-at-Law of the Middle Temple; Toxicologist, and one of the Pathologists selected for London Inquest Purposes; Pathologist to the Great Northern Central Hospital, etc. With 130 Illustrations. Philadelphia: P. Blakiston's Son & Co., 1917. Pp. xv-209. Price, $3.

As we turn over the pages of this valuable little book, we are pained to note that Doctor Frenkel's admirable work has not been given an English presentation worthy of it. Typographical errors abound, in fact, the book practically begins with one (see the third word on the first page). Others noted at random are on page 52, line 2; page 68, line 1; page 171, last line. The English, too, is faulty; the wrong preposition is frequently used; the subjunctive is mistreated; commas are omitted, and grammatical errors are found. Clumsy expressions are common, e. g., "the spinal column looked like kinked," page 51; "very suitable nervine sedative," page 204. Usages with which many readers will be found to quarrel are seen; throughout, the spelling "shews" is used, such words as "internally," "hypodermically," and "intramuscularly" are sometimes capitalized, sometimes not. The part of the book devoted to the medical treatment has apparently been added by the translator and is of little value, being hardly more than a list of drugs, mostly German proprietary compounds. An effort is made to describe a treatment for the opium habit in 300 words; it is of course totally inadequate. The inconsistency of admitting the universal luetic etiology of tabes in the preface and denying it in the text is observed. The Frenkel exercises themselves are invaluable, they are painstakingly described, and the illustrations are admirable. Two great advantages of them are that they can be carried out in a private home and a minimum amount of apparatus is necessary. The neurologist and general practitioner can not afford to be without it.

Rest, Suggestion, and Other Therapeutic Measures in Nervous and Mental Diseases. By Francis X. Dercum, A. M., M. D., Ph. D., Professor of Nervous and Mental Diseases in the Jefferson Medical College, Philadelphia; Ex-President of the American Neurological Association, of the Philadelphia Neurological Society, and of the Philadelphia Psychiatric Society; Foreign Corresponding Member of the Neurological Society of Paris, etc. Second Edition. Philadelphia: P. Blakiston's Son & Co. 1917. Pp. ix-395. Price, $3.50.

This book is a reprint of a volume written for the *System of Physiologic Therapeutics*, edited by Dr. S. Solis-Cohen and published in 1903. Naturally much revision has been necessary. Under Suggestion by Magic and Mystic Practices the author makes a vitriolic attack on psychanalysis. His attitude toward the whole mental problem is static rather than dynamic: he believes in sterilization and isolation. The book is a large one and has several very interesting features.

After Office Hours

The *Medical Pickwick* for August is full of good things, as usual. The Spinal Column is especially bright. See the triangle and Damaged Goods.

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The Five Senses are five delightful baby pictures in the *Pictorial Review* for August. They will appeal to everyone who has a baby in the home, and everyone has one—or wishes that he had.

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The *Outlook* for July 18th contains the following information about the best selling novelist, Harold Bell Wright: "When he began to write novels, he went West for his health." Evidently his home town was not without literary acumen.

* * *

The *Midweek Pictorial* of the New York *Times* for July 19th gives a page to pictures of "war chiefs." Among them we are gratified to note Dr. Joseph Blake, chief of the new American Red Cross Hospital in Paris. Another recognition of the importance of the medical arm of the service.

* * *

The *Ladies' Home Journal* has inaugurated a Red Cross Department, edited by ex-President Taft. The August issue fills an entire page with information about the activities of this organization. Many questions of readers about features of the Red Cross work are printed, together with the answers. This magazine also contains a real poem, The Madonna of the Curb, by Christopher Morley.

* * *

The story of how the Red Cross was put on a war basis is well told by Elizabeth Frazer in the *Saturday Evening Post* for July 14th and July 21st. How many organizations, all imbued with the noble desire of being of service to the suffering and necessarily pulling different ways, were gradually drawn together under one head, is told by this writer in a way interesting to physicians and laymen alike.

* * *

Leslie's for June 28th is a Red Cross number. First, there is a big red cross on the cover, seated on the arms of which, in an extremely natural pose with their backs to each other, are a beautiful nurse doing something with a bandage roll, which varies in width from place to place along its length, and a handsome gentleman whom we know to be a doctor on account of his Van Dyke beard: he is pouring something from a green graduate into a blue bottle. If he really poured from the graduate as he is holding it, the fluid would run down the side of the bottle, but let us not be hypercritical. We think it is a lovely picture, especially the nurse's shoes. The leading editorials in this number are stirring appeals for the Red Cross and there are also several articles dealing with the activities of this organization. The pictures are very good; especially interesting is the one showing a ward in the Civil War Hospital at Georgetown, D. C. The large, wooden beds, the elaborately carved chandeliers, the hoop skirted volunteer nurses, all transport us back to the days when all abdominal wounds were fatal, when Sherman marched to the sea, and when Lee's ragged army drove the Northern hosts back into Pennsylvania.

Official News

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending July 18, 1917:

Carson, H. B., Sanitary Chemist. Directed to proceed to Chicago, Ill., on special temporary duty.

Eskey, C. R., Assistant Surgeon. Relieved from duty at Ellis Island, N. Y., effective June 30, 1917, and directed to continue on special temporary duty at El Paso, Tex.

Frank, L. C., Sanitary Engineer. Directed to proceed to Chillicothe, Ohio, on special temporary duty.

Phelps, E. B., Professor. Directed to proceed to Chicago and other places in Illinois, Indiana, and Ohio, on special temporary duty.

Pierce, C. C., Senior Surgeon. Relieved from duty at San Francisco, Cal., effective June 30, 1917, and directed to continue on special temporary duty at Little Rock, Ark.

Preble, P., Passed Assistant Surgeon. Directed to proceed to Des Moines, Ia., on special temporary duty.

Stimson, A. M., Surgeon. Relieved from duty at the Hygienic Laboratory, Washington, D. C.; directed to proceed under orders from the Navy Department to Newport, R. I.

Streeter, H. W., Sanitary Engineer. Directed to proceed to Des Moines, Ia., on special temporary duty.

White, J. H., Senior Surgeon. Under executive order dated April 3, 1917, and at the request of the Secretary of War, ordered to report to the Surgeon General of the Army, for special duty.

Appointments.

Dr. Edwin Howard Settle and Dr. Harry Evans Trimble appointed and commissioned as assistant surgeons from date of oath.

Boards Convened.

Boards of medical officers convened for the physical examination of certain officers of the Coast Guard to ascertain their fitness for promotion, on July 17, 1917, as follows: Marine Hospital, Key West, Fla. Detail for the board: Surgeon G. M. Guiteras, chairman; Assistant Surgeon Charles Armstrong, recorder. Ellis Island, N. Y. Detail for the board: Surgeon F. C. Smith, chairman; Assistant Surgeon T. B. H. Anderson, recorder.

The following officers of the Public Health Service have been designated as members of Coast Guard retiring boards: At Government Hospital for the Insane, July 12, 1917: Surgeons H. S. Cumming and Carroll Fox. At Marine Hospital, Baltimore, Md., July 16, 1917: Surgeon C. W. Vogel and Assistant Surgeon E. W. Scott. At Marine Hospital, Stapleton, N. Y., July 12, 1917: Surgeons M. K. Gwyn and A. D. Foster. At Marine Hospital, Port Townsend, Wash., July 17, 1917: Passed Assistant Surgeons B. H. Earle and Hugh de Valin.

Births, Marriages, and Deaths

Married.

McAtee-Callahan.—In Omaha, Neb., on Tuesday, July 10th, Dr. John S. McAtee, of Council Bluffs, Ia., and Miss Marie Callahan.

McHugh-Barnes.—In Uniontown, Pa., on Tuesday, July 10th, Dr. William A. McHugh, Jr., and Miss Gwendolyn Barnes.

Died.

Bachelder.—In Rockland, Me., on Tuesday, July 10th, Dr. Lucien F. Bachelder, aged eighty-one years.

Baynum.—In Dexter, Me., on Saturday, July 14th, Dr. Mary H. Baynum.

Converse.—In Eastford, Conn., on Monday, July 9th, Dr. Harvey H. Converse, aged seventy-one years.

Ebright.—In Sharon Center, Ohio, on Tuesday, July 10th, Dr. Leonidas S. Ebright, aged seventy-two years.

Farrow.—In Visalia, Cal., on Friday, July 6th, Dr. Edwin D. Farrow.

Ginn.—In Dayton, Ohio, on Friday, July 13th, Dr. Charles M. Ginn, aged forty-one years.

Hall.—In Wells, Me., on Wednesday, July 11th, Dr. Jeremiah G. Hall, aged eighty-two years.

Johnson.—In New Hope, Ala., on Monday, July 9th, Dr. Harry R. Johnson, aged fifty-five years.

Marrero.—In Covington, La., on Friday, July 13th, Dr. F. G. Marrero, aged sixty-two years.

Mayberry.—In South Weymouth, Mass., on Saturday, July 14th, Dr. Edwin N. Mayberry, aged sixty-one years.

Null.—In New Haven, Ind., on Sunday, July 8th, Dr. Lycurgus S. Null, aged seventy-six years.

Scott.—In Pleasantville, Ia., on Saturday, July 7th, Dr. William A. Scott, aged eighty-five years.

Wetmore.—In Mexico, N. Y., on Tuesday, June 19th, Dr. Warren L. Wetmore, aged forty-eight years.

Young.—In Newark, N. J., on Saturday, July 14th, Dr. Charles Young, aged seventy-five years.

Young.—In Indianapolis, Ind., on Tuesday, July 10th, Dr. Michael A. Young, aged fifty-nine years.

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Alcoholism and Crime.—With the declaration that every agency will be brought to bear upon discouragement of the use of intoxicating liquors, the State Department of Health has issued a statement that investigation shows twenty-four per cent. of all homicides in 1916 outside New York to have been directly or indirectly due to the use of alcohol. Coroners who returned the death certificates were asked to furnish the data. Last year in the State, outside New York, there were reported 138 homicides, says the Department's statement. Data were secured on eighty-three cases, in which nine were infants and seven cases in which the facts were not obtainable. In thirty-six cases the coroners declared liquor to be the basic cause of the homicides, so that of those cases where complete data was obtained, liquor stands responsible for fifty-four per cent. of the homicides. The Secretary of State informs the Department that ninety-six per cent. of revocations of auto licenses in 1915 were for intoxication. The percentage for this cause in 1916 was sixty-three, but the increase in the number of revocations from 1915 to 1916 was 109 per cent. These facts point a strong moral. The State Department of Health is concerned with the health side of the problem, however, for, in addition to the deaths directly attributed to liquor, there is an enormous amount of sickness, lowered vitality, and other results which eventually contribute to death. This we cannot estimate, but we know it exists. Alcohol causes more inefficiency, misery, sickness, and death than any other single cause. The relative death rate between the abstainer and nonabstainer is as 100 is to 186. Wholly aside from the relation of liquor to crime and morality, the question of health makes it imperative that we do everything we can to cut down the consumption of alcoholic beverages.

No Epidemic of Infantile Paralysis This Year.—According to figures just made public by Health Commissioner Emerson, New Yorkers are apparently safe from poliomyelitis this year. Moreover, according to the Commissioner, New York is now enjoying the lowest death rate ever observed in the history of the city. Whereas last year at this time, 1,900 true cases of poliomyelitis had been reported to the Department of Health since the first of January, 1916, only seventy-seven cases have been reported to the Department of Health this year. Commissioner Emerson called attention to the fact that physicians were evidently much more on the lookout for cases of this disease than they formerly were. In compliance with the department's request, they are reporting all cases which are even remotely suspected to be poliomyelitis, a procedure which makes it extremely unlikely that any considerable number of cases escape detection and supervision by the health authorities.

Less than one third of the cases reported to the Department of Health this year as possibly poliomyelitis, were true cases of the disease. The rest consisted of children ill with conditions whose symptoms somewhat resembled poliomyelitis. Of these, the largest proportion were cases of meningitis. Owing to the demonstrated value of hospital isolation in controlling the spread of poliomyelitis, the Department of Health is insisting on the hospital care of all cases excepting where practically perfect isolation can be provided for the patient at home. Of the cases occurring this year, eighty per cent. have been removed to the health department hospitals. Last year, only fifty per cent. of the cases were treated in hospitals.

The Department of Health is continuing its scientific studies of poliomyelitis begun last year. These studies embrace laboratory investigations to verify or confirm observations reported by other workers as to the specific cause of the disease, and experimental studies looking toward the production of a specific serum for the treatment of the disease. In addition to this, epidemiological studies are being made to see whether there is any special relation between the new cases and the homes or dwellings where cases occurred last year. Studies are also being made to determine whether defects or disease of the nose, throat, tonsils, and adenoids have any special relation to the occurrence of poliomyelitis.

The National Research Council.—Acting in its capacity as a department of the Council of National Defense, charged with the organization of science and research in the interest of national defense, the National Research Council is engaged in the formulation and organization of problems in connection with pressing needs which have developed in the Army and Navy.

The chairman of the council, Dr. George E. Hale, is giving his entire time to the work in Washington, and the following members of the council are also residing here at present: Dr. Charles D. Walcott, chairman of the aeronautics committee; Dr. Raymond Pearl, chairman of the agriculture committee; Dr. William H. Holmes, chairman of the anthropology committee; Dr. W. S. Stratton, chairman of committee on census of research; Dr. M. T. Bogert, chairman of chemistry committee; Dr. W. F. Durand, vice chairman of engineering committee; Dr. Alonzo E. Taylor, chairman of food committee; Dr. V. C. Vaughan, chairman of committee on medicine and hygiene; Dr. L. A. Bauer, chairman committee on navigation and nautical instruments; Dr. Van H. Manning, chairman committee on noxious gases; Dr. R. A. Millikan, chairman of physics committee; Dr. C. E. Mendenhall, vice chairman of physics committee.

During the past month the members of the council have been actively cooperating with the members of the French scientific mission now in Washington, as a result of which it has been possible to formulate various agencies for the consideration of technical problems for the solution of which definite need has arisen at the battle front.

New Publications Received

Causes of Death by Occupation. Occupational Mortality Experience of the Metropolitan Life Insurance Company, Industrial Department, 1011-1013. By Louis I. Dublin, Ph. D. Industrial Accidents and Hygiene Series, No. 11, of the U. S. Department of Labor Bureau of Labor Statistics. March, 1917. Washington: Government Printing Office, 1917. Pp. 88.

Las Tinas de Barcelona. Con un resumen de todas las variedades descritas hasta hoy dia, y tecnica detallada para la preparacion de los medios de cultivo y aislamiento de las especies. Contribucion al estudio de la distribucion geografica de las tinas. Tesis de doctorado. Por el Dr. Ricardo Moragas y Gracia, Jefe del laboratorio de bacteriologia y serologia del hospital de la Santa Cruz; Professor agregado de bacteriologia de la Academie y Laboratori de Ciencies Mediques de Catalunya. Barcelona: Talleres de artes graficas henrich y c., 1917. Pp. 56.

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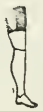

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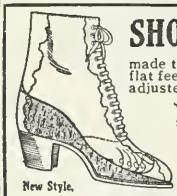

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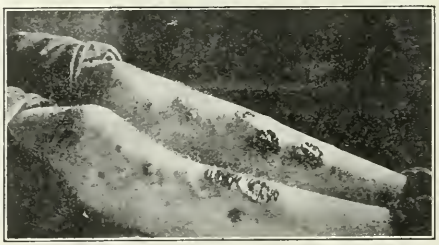

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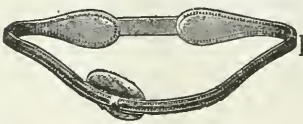

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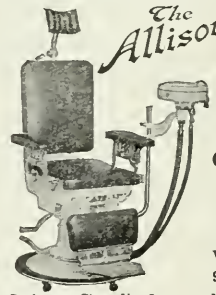

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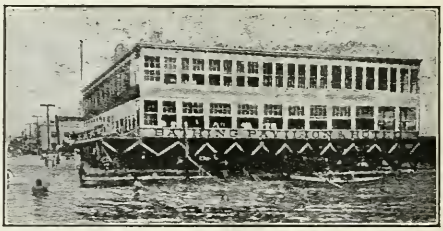

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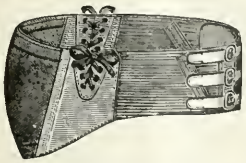

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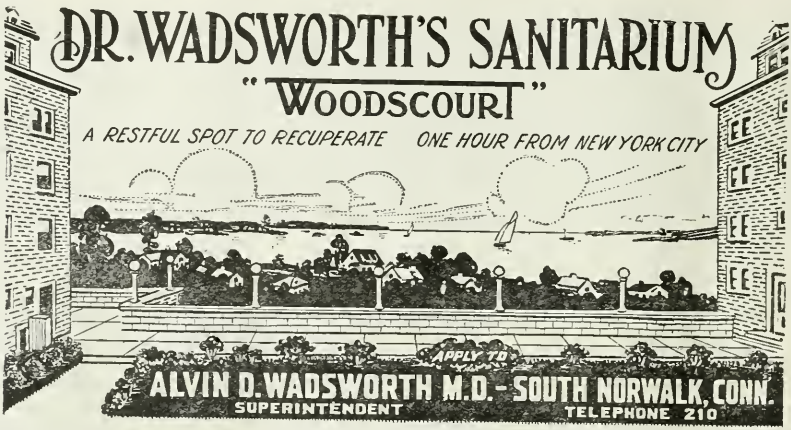

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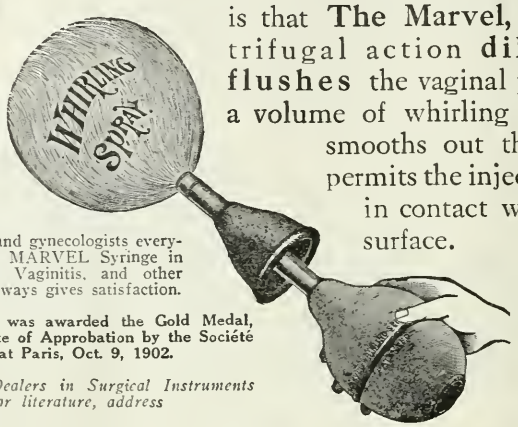

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